

SEQUENCE LISTING

<110> MCCARTHY, Sean A
FRASER, Christopher C
SHARP, John D
BARNES, Thomas S
KIRST, Susan J
MACKAY, Charles R
MYERS, Paul S
LEIBY, Kevin R
WRIGHTON, Nicholas
GOODEARL, Andrew
HOLTZMAN, Douglas A

<120> NOVEL GENES ENCODING PROTEINS HAVING PROGNOSTIC,
DIAGNOSTIC, PREVENTIVE, THERAPEUTIC, AND OTHER USES

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<140> Not Yet Assigned
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<151> 2000-01-07

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Ala Glu Leu Ser Cys Ala Ile Val Ala Gly Asn Glu Glu Asn Ile Phe
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Ile Ile Asp Pro Arg Ser Cys Asp Ile His Thr Asn Val Ser Met Asp
515 520 525

Ser Val Pro Tyr Thr Glu Trp Glu Leu Ser Val Ile Ile Gln Asp Lys
530 535 540

Gly Asn Pro Gln Leu His Thr Lys Val Leu Leu Lys Cys Met Ile Phe
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Glu Tyr Ala Glu Ser Val Thr Ser Thr Ala Met Thr Ser Val Ser Gln
565 570 575

Ile Cys Ala Val Leu Leu Val Ile Met Val Leu Phe Ala Thr Arg Cys
580 585 590

Asn Arg Glu Lys Lys Asp Thr Arg Ser Tyr Asn Cys Arg Val Ala Glu
595 600 605

Ser Thr Tyr Gln His His Pro Lys Arg Pro Ser Arg Gln Ile His Lys
610 615 620

Gly Asp Ile Thr Leu Val Pro Thr Ile Asn Gly Thr Leu Pro Ile Arg
625 630 635 640

Ser His His Arg Ser Ser Pro Ser Ser Ser Pro Thr Leu Glu Arg Gly
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Gln Met Gly Ser Arg Gln Ser His Asn Ser His Gln Ser Leu Asn Ser
660 665 670

Glu Leu Thr His Ala Thr Pro Ala Val Glu Gln Val Ser Gln Leu Leu
675 680 685

Ser Met Leu His Gln Gly Gln Tyr Gln Pro Arg Pro Ser Phe Arg Gly
690 695 700

Asn Lys Tyr Ser Arg Ser Tyr Arg Tyr Ala Leu Gln Asp Met Asp Lys
705 710 715 720

Phe Ser Leu Lys Asp Ser Gly Arg Gly Asp Ser Glu Ala Gly Asp Ser
725 730 735

Asp Tyr Asp Leu Gly Arg Asp Ser Pro Ile Asp Arg Leu Leu Gly Glu
740 745 750

Met Arg Leu Cys Thr Glu Glu Cys Arg Val Leu Gly His Ser Asp Gln
755 760 765

Cys Trp Met Pro Pro Leu Pro Ser Pro Ser Ser Asp Tyr Arg Ser Asn
770 775 780

Met Phe Ile Pro Gly Glu Glu Phe Pro Thr Gln Pro Gln Gln His
785 790 795 800

Pro His Gln Ser Leu Glu Asp Asp Ala Gln Pro Ala Asp Ser Gly Glu
805 810 815

Lys Lys Lys Ser Phe Ser Thr Phe Gly Lys Asp Ser Pro Asn Asp Glu
820 825 830

Ser Ser Val Phe Gln Arg Leu Leu Pro Pro Ser Leu Asp Thr Tyr Ser
835 840 845

Gly Pro Pro Leu Gly Thr His Ser Ser Val Gln Pro Ser Ser Lys Trp
850 855 860

Met Asp Ala Ser Glu Leu Val Ala Glu Ile Asn Lys Leu Leu Gln Asp
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Val Arg Gln Ser

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<212> PRT

<213> Homo sapiens

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35 40 45

Leu Leu Val Val Asn Glu Asp Asn Gly Glu Ile Ser Ile Gly Ala Thr
50 55 60

Glu Phe Asp Val Ile Thr Leu Pro Thr Glu His Leu Gln Leu Phe His
65 70 75 80

Ile Glu Val Glu Val Leu Asp Ile Asn Asp Asn Ser Pro Gln Phe Ser
85 90 95

Arg Ser Leu Ile Pro Ile Glu Ile Ser Glu Ser Ala Ala Val Gly Thr
100 105 110

Arg Ile Pro Leu Asp Ser Ala Phe Asp Pro Asp Val Gly Glu Asn Ser
115 120 125

Leu His Thr Tyr Ser Leu Ser Ala Asn Asp Phe Phe Asn Ile Glu Val
130 135 140

Arg Thr Arg Thr Asp Gly Ala Lys Tyr Ala Glu Leu Ile Val Val Arg
145 150 155 160

Ala Ser Asp Met Gly Val Pro Gln Arg Ser Gly Ser Ser Ile Leu Lys
165 170 175

Ile Ser Ile Ser Asp Ser Asn Asp Asn Ser Pro Ala Phe Glu Gln Gln
180 185 190

Ser Tyr Ile Ile Gln Leu Leu Glu Asn Ser Pro Val Gly Thr Leu Leu

PDB ID: 1HOM

BIOLOGICAL ACTIVITIES

195	200	205
Leu Asp Leu Asn Ala Thr Asp Pro Asp Glu Gly Ala Asn Gly Lys Ile		
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Val Tyr Ser Phe Ser Ser His Val Ser Pro Lys Ile Met Glu Thr Phe		
225	230	235
Asp Tyr Glu Ile Thr Lys Ser Tyr Glu Ile Asp Val Gln Ala Gln Asp		
245	250	255
Leu Gly Pro Asn Ser Ile Pro Ala His Cys Lys Ile Ile Ile Lys Val		
260	265	270
Val Asp Val Asn Asp Asn Lys Pro Glu Ile Asn Ile Asn Leu Met Ser		
275	280	285
Pro Gly Lys Glu Glu Ile Ser Tyr Ile Phe Glu Gly Asp Pro Ile Asp		
290	295	300
Thr Phe Val Ala Leu Val Arg Val Gln Asp Lys Asp Ser Gly Leu Asn		
305	310	315
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Gln Lys Thr Tyr Glu Asn Asn Tyr Leu Ile Leu Thr Asn Ala Thr Leu		
325	330	335
Asp Arg Glu Lys Arg Ser Glu Tyr Ser Leu Thr Val Ile Ala Glu Asp		
340	345	350
Arg Gly Thr Pro Ser Leu Ser Thr Val Lys His Phe Thr Val Gln Ile		
355	360	365
Asn Asp Ile Asn Asp Asn Pro Pro His Phe Gln Arg Ser Arg Tyr Glu		
370	375	380
Phe Val Ile Ser Glu Asn Asn Ser Pro Gly Ala Tyr Ile Thr Thr Val		
385	390	395
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Thr Ala Thr Asp Pro Asp Leu Gly Glu Asn Gly Gln Val Thr Tyr Thr		
405	410	415
Thr Ile Asp Pro Ser Asn Gly Ala Ile Tyr Ala Leu Arg Ile Phe Asp		
420	425	430
His Glu Glu Val Ser Gln Ile Thr Phe Val Val Glu Ala Arg Asp Gly		
435	440	445
Gly Ser Pro Lys Gln Leu Val Ser Asn Thr Thr Val Val Leu Thr Ile		

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450	455	460
Ile Asp Glu Asn Asp Asn Val Pro Val Val Ile Gly Pro Ala Leu Arg		
465	470	475
Asn Asn Thr Ala Glu Ile Thr Ile Pro Lys Gly Ala Glu Ser Gly Phe		
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Ala Glu Leu Ser Cys Ala Ile Val Ala Gly Asn Glu Glu Asn Ile Phe		
500	505	510
Ile Ile Asp Pro Arg Ser Cys Asp Ile His Thr Asn Val Ser Met Asp		
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Ser Val Pro Tyr Thr Glu Trp Glu Leu Ser Val Ile Ile Gln Asp Lys		
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Gly Asn Pro Gln Leu His Thr Lys Val Leu Leu Lys Cys Met Ile Phe		
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Pro Ile Arg Ser His His Arg Ser Ser Pro Ser Ser Pro Thr Leu
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Glu Arg Gly Gln Met Gly Ser Arg Gln Ser His Asn Ser His Gln Ser
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Phe Ser Leu Glu Leu Thr His Ala Thr Pro Ala Val Glu Gln Val Ser
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Gln Leu Leu Ser Met Leu His Gln Gly Gln Tyr Gln Pro Arg Pro Ser
100 105 110

Phe Arg Gly Asn Lys Tyr Ser Arg Ser Tyr Arg Tyr Ala Leu Gln Asp
115 120 125

Met Asp Lys Phe Ser Leu Lys Asp Ser Gly Arg Gly Asp Ser Glu Ala
130 135 140

Gly Asp Ser Asp Tyr Asp Leu Gly Arg Asp Ser Pro Ile Asp Arg Leu
145 150 155 160

Pro Ala Ala Met Arg Leu Cys Thr Glu Glu Cys Arg Val Leu Gly His
165 170 175

Ser Asp Gln Cys Trp Met Pro Pro Leu Pro Ser Pro Ser Asp Tyr
180 185 190

Arg Ser Asn Met Phe Ile Pro Gly Glu Glu Phe Pro Thr Gln Pro Gln
195 200 205

Gln Gln His Pro His Gln Ser Leu Glu Asp Asp Ala Gln Pro Ala Asp
210 215 220

Ser Gly Glu Lys Lys Ser Phe Ser Thr Phe Gly Lys Asp Ser Pro
225 230 235 240

Ser Glu Met Ser Ser Val Phe Gln Arg Leu Leu Pro Pro Ser Leu Asp
245 250 255

Thr Asn Cys Gly Pro Pro Leu Gly Thr His Ser Ser Val Gln Pro Ser
260 265 270

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Leu Gln Asp Val Arg Gln Ser
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Arg Ile Tyr Glu Glu Gln Arg Val Gly Ser Val Ile Ala Arg Leu Ser
35 40 45

Glu Asp Val Ala Asp Val Leu Leu Lys Leu Pro Asn Pro Ser Thr Val
50 55 60

Arg Phe Arg Ala Met Gln Arg Gly Asn Ser Pro Leu Leu Val Val Asn
65 70 75 80

Glu Asp Asn Gly Glu Ile Ser Ile Gly Ala Thr Ile Asp Arg Glu Gln
85 90 95

Thr Leu Pro Thr Glu His Leu Gln Leu Phe His Ile Glu Val Glu Val
100 105 110

Leu Asp Ile Asn Asp Asn Ser Pro Gln Phe Ser Arg Ser Leu Ile Pro
115 120 125

Ile Glu Ile Ser Glu Ser Ala Ala Val Gly Thr Arg Ile Pro Leu Asp
130 135 140

Ser Ala Phe Asp Pro Asp Val Gly Glu Asn Ser Leu His Thr Tyr Ser
145 150 155 160

Leu Ser Ala Asn Asp Phe Phe Asn Ile Glu Val Arg Thr Arg Thr Asp
165 170 175

Glu Leu Lys Ser Ser Tyr Glu Leu Gln Leu Thr Ala Ser Asp Met Gly
180 185 190

Val Pro Gln Arg Ser Gly Ser Ser Ile Leu Lys Ile Ser Ile Ser Asp
195 200 205

Ser Asn Asp Asn Ser Pro Ala Phe Glu Gln Gln Ser Tyr Ile Ile Gln
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Leu Leu Glu Asn Ser Pro Val Gly Thr Leu Leu Leu Asp Leu Asn Ala
225 230 235 240

Thr Asp Pro Asp Glu Gly Ala Asn Gly Lys Ile Val Tyr Ser Phe Ser
245 250 255

Ser His Val Ser Pro Lys Ile Met Glu Thr Phe Lys Ile Asp Ser Glu
260 265 270

Lys Ser Tyr Glu Ile Asp Val Gln Ala Gln Asp Leu Gly Pro Asn Ser
275 280 285

Ile Pro Ala His Cys Lys Ile Ile Ile Lys Val Val Asp Val Asn Asp
290 295 300

BLODGETT

Asn	Lys	Pro	Glu	Ile	Asn	Ile	Asn	Leu	Met	Ser	Pro	Gly	Lys	Glu	Glu
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Val	Arg	Val	Gln	Asp	Lys	Asp	Ser	Gly	Leu	Asn	Gly	Glu	Ile	Val	Cys
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Asn	Asn	Tyr	Leu	Ile	Leu	Thr	Asn	Ala	Thr	Leu	Asp	Arg	Glu	Lys	Arg
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Ser	Glu	Tyr	Ser	Leu	Thr	Val	Ile	Ala	Glu	Asp	Arg	Gly	Thr	Pro	Ser
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Leu	Ser	Thr	Val	Lys	His	Phe	Thr	Val	Gln	Ile	Asn	Asp	Ile	Asn	Asp
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Asn	Pro	Pro	His	Phe	Gln	Arg	Ser	Arg	Tyr	Glu	Phe	Val	Ile	Ser	Glu
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Asn	Asn	Ser	Pro	Gly	Ala	Tyr	Ile	Thr	Thr	Val	Thr	Ala	Thr	Asp	Pro
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Phe	Ile	Leu	Gly	Ser	Ser	Ile	Thr	Thr	Tyr	Val	Thr	Ile	Asp	Pro	Ser
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Asn	Gly	Ala	Ile	Tyr	Ala	Leu	Arg	Ile	Phe	Asp	His	Glu	Glu	Val	Ser
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Gln	Ile	Thr	Phe	Val	Val	Glu	Ala	Arg	Asp	Gly	Gly	Ser	Pro	Lys	Gln
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Leu	Val	Ser	Asn	Thr	Thr	Val	Val	Leu	Thr	Ile	Ile	Asp	Glu	Asn	Asp
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Ile	Thr	Ile	Pro	Lys	Gly	Ala	Glu	Ser	Gly	Phe	His	Val	Thr	Arg	Ile
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Ser	Cys	Asp	Ile	His	Thr	Asn	Val	Ser	Met	Asp	Ser	Val	Pro	Tyr	Thr
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Glu Trp Glu Leu Ser Val Ile Ile Gln Asp Lys Gly Asn Pro Gln Leu
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His Thr Lys Val Leu Leu Lys Cys Met Ile Phe Glu Tyr Ala Glu Ser
580 585 590

Val Thr Ser Thr Ala Met Thr Ser Val Ser Gln Ala Ser Leu Asp Val
595 600 605

Leu Val Ile Met Val Leu Phe Ala Thr Arg Cys Asn Arg Glu Lys Lys
610 615 620

Asp Thr Arg Ser Tyr Asn Cys Arg Val Ala Glu Ser Thr Tyr Gln His
625 630 635 640

His Pro Lys Arg Pro Ser Arg Gln Ile His Lys Gly Asp Ile Thr Leu
645 650 655

Val Pro Thr Ile Asn Gly Thr Leu Pro Ile Arg Ser His His Arg Ser
660 665 670

Ser Pro Ser Ser Ser Pro Thr Leu Glu Arg Gly Gln Met Gly Ser Arg
675 680 685

Ser Ser Asn His Val Pro Glu Asn Phe Ser Leu Glu Leu Thr His Ala
690 695 700

Thr Pro Ala Val Glu Val Ser Gln Leu Leu Ser Met Leu His Gln Gly
705 710 715 720

Gln Tyr Gln Pro Arg Pro Ser Phe Arg Gly Asn Lys Tyr Ser Arg Ser
725 730 735

Tyr Arg Tyr Ala Leu Gln Asp Met Asp Lys Phe Ser Leu Lys Asp Ser
740 745 750

Gly Arg Gly Asp Ser Glu Ala Gly Asp Ser Asp Tyr Asp Leu Gly Arg
755 760 765

Asp Ser Pro Ile Asp Arg Leu Leu Gly Glu Gly Phe Ser Asp Leu Phe
770 775 780

Glu Cys Arg Val Leu Gly His Ser Asp Gln Cys Trp Met Pro Pro Leu
785 790 795 800

Pro Ser Pro Ser Ser Asp Tyr Arg Ser Asn Met Phe Ile Pro Gly Glu
805 810 815

PROTEIN SEQUENCES

Glu Phe Pro Thr Gln Pro Gln Gln His Pro His Gln Ser Leu Glu
820 825 830

Asp Asp Ala Gln Pro Ala Asp Ser Gly Glu Lys Lys Ser Phe Ser
835 840 845

Thr Phe Gly Lys Asp Ser Pro Asn Asp Glu Asp Thr Gly Asp Thr Ser
850 855 860

Asp Arg Ser Asn Ser Leu Glu Arg Arg Lys Gly Pro Leu Pro Ala Lys
865 870 875 880

Asn His Leu Asn Asp Gly Lys His Glu Leu Met Asp Ala Ser Glu Leu
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Val Ala Glu Ile Asn Lys Leu Leu Gln Asp Val Arg Gln Ser
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35 40 45

Leu Leu Val Val Asn Glu Asp Asn Gly Glu Ile Ser Ile Gly Ala Thr
50 55 60

Glu Phe Asp Val Ile Thr Leu Pro Thr Glu His Leu Gln Leu Phe His
65 70 75 80

Ile Glu Val Glu Val Leu Asp Ile Asn Asp Asn Ser Pro Gln Phe Ser
85 90 95

Arg Ser Leu Ile Pro Ile Glu Ile Ser Glu Ser Ala Ala Val Gly Thr
100 105 110

Arg Ile Pro Leu Asp Ser Ala Phe Asp Pro Asp Val Gly Glu Asn Ser
115 120 125

Leu His Thr Tyr Ser Leu Ser Ala Asn Asp Phe Phe Asn Ile Glu Val
130 135 140

Arg Thr Arg Thr Asp Gly Ala Lys Tyr Ala Glu Leu Ile Val Val Arg
145 150 155 160

Ala Ser Asp Met Gly Val Pro Gln Arg Ser Gly Ser Ser Ile Leu Lys
165 170 175

Ile Ser Ile Ser Asp Ser Asn Asp Asn Ser Pro Ala Phe Glu Gln Gln
180 185 190

Ser Tyr Ile Ile Gln Leu Leu Glu Asn Ser Pro Val Gly Thr Leu Leu
195 200 205

Leu Asp Leu Asn Ala Thr Asp Pro Asp Glu Gly Ala Asn Gly Lys Ile
210 215 220

Val Tyr Ser Phe Ser Ser His Val Ser Pro Lys Ile Met Glu Thr Phe
225 230 235 240

Asp Tyr Glu Ile Thr Lys Ser Tyr Glu Ile Asp Val Gln Ala Gln Asp
245 250 255

Leu Gly Pro Asn Ser Ile Pro Ala His Cys Lys Ile Ile Ile Lys Val
260 265 270

Val Asp Val Asn Asp Asn Lys Pro Glu Ile Asn Ile Asn Leu Met Ser
275 280 285

Pro Gly Lys Glu Glu Ile Ser Tyr Ile Phe Glu Gly Asp Pro Ile Asp
290 295 300

Thr Phe Val Ala Leu Val Arg Val Gln Asp Lys Asp Ser Gly Leu Asn
305 310 315 320

Gln Lys Thr Tyr Glu Asn Asn Tyr Leu Ile Leu Thr Asn Ala Thr Leu
325 330 335

Asp Arg Glu Lys Arg Ser Glu Tyr Ser Leu Thr Val Ile Ala Glu Asp
340 345 350

Arg Gly Thr Pro Ser Leu Ser Thr Val Lys His Phe Thr Val Gln Ile
355 360 365

Asn Asp Ile Asn Asp Asn Pro Pro His Phe Gln Arg Ser Arg Tyr Glu
370 375 380

Phe Val Ile Ser Glu Asn Asn Ser Pro Gly Ala Tyr Ile Thr Thr Val
385 390 395 400

Thr Ala Thr Asp Pro Asp Leu Gly Glu Asn Gly Gln Val Thr Tyr Thr
405 410 415

Thr Ile Asp Pro Ser Asn Gly Ala Ile Tyr Ala Leu Arg Ile Phe Asp
420 425 430

His Glu Glu Val Ser Gln Ile Thr Phe Val Val Glu Ala Arg Asp Gly
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Gly Ser Pro Lys Gln Leu Val Ser Asn Thr Thr Val Val Leu Thr Ile
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Ile Asp Glu Asn Asp Asn Val Pro Val Val Ile Gly Pro Ala Leu Arg
465 470 475 480

Asn Asn Thr Ala Glu Ile Thr Ile Pro Lys Gly Ala Glu Ser Gly Phe
485 490 495

Ala Glu Leu Ser Cys Ala Ile Val Ala Gly Asn Glu Glu Asn Ile Phe
500 505 510

Ile Ile Asp Pro Arg Ser Cys Asp Ile His Thr Asn Val Ser Met Asp
515 520 525

Ser Val Pro Tyr Thr Glu Trp Glu Leu Ser Val Ile Ile Gln Asp Lys
530 535 540

Gly Asn Pro Gln Leu His Thr Lys Val Leu Leu Lys Cys Met Ile Phe
545 550 555 560

Glu Tyr Ala Glu Ser Val Thr Ser Thr Ala Met Thr Ser Val Ser Gln
565 570 575

Ile Cys Ala Val Leu Leu Val Ile Met Val Leu Phe Ala Thr Arg Cys
580 585 590

Asn Arg Glu Lys Lys Asp Thr Arg Ser Tyr Asn Cys Arg Val Ala Glu
595 600 605

Ser Thr Tyr Gln His His Pro Lys Arg Pro Ser Arg Gln Ile His Lys
610 615 620

Gly Asp Ile Thr Leu Val Pro Thr Ile Asn Gly Thr Leu Pro Ile Arg
625 630 635 640

Ser His His Arg Ser Ser Pro Ser Ser Pro Thr Leu Glu Arg Gly
645 650 655

Gln Met Gly Ser Arg Gln Ser His Asn Ser His Gln Ser Leu Asn Ser
660 665 670

Glu Leu Thr His Ala Thr Pro Ala Val Glu Val Ser Gln Leu Leu Ser
675 680 685

Met Leu His Gln Gly Gln Tyr Gln Pro Arg Pro Ser Phe Arg Gly Asn
690 695 700

Lys Tyr Ser Arg Ser Tyr Arg Tyr Ala Leu Gln Asp Met Asp Lys Phe
705 710 715 720

Ser Leu Lys Asp Ser Gly Arg Gly Asp Ser Glu Ala Gly Asp Ser Asp
725 730 735

Tyr Asp Leu Gly Arg Asp Ser Pro Ile Asp Arg Leu Leu Gly Glu Gly
740 745 750

Arg Leu Cys Thr Glu Glu Cys Arg Val Leu Gly His Ser Asp Gln Cys
755 760 765

Trp Met Pro Pro Leu Pro Ser Pro Ser Asp Tyr Arg Ser Asn Met
770 775 780

Phe Ile Pro Gly Glu Glu Phe Pro Thr Gln Pro Gln Gln His Pro
785 790 795 800

His Gln Ser Leu Glu Asp Asp Ala Gln Pro Ala Asp Ser Gly Glu Lys
805 810 815

Lys Lys Ser Phe Ser Thr Phe Gly Lys Asp Ser Pro Asn Asp Glu Asp
820 825 830

Ser Val Phe Gln Arg Leu Leu Pro Pro Ser Leu Asp Thr Tyr Ser Glu
835 840 845

Leu Pro Ala Met Glu Glu Ile Pro Glu Asn Tyr Glu Glu Asp Asp Phe
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Asp Ala Ser Glu Leu Val Ala Glu Ile Asn Lys Leu Leu Gln Asp Val
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Arg Gln Ser

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Gln Ile His Lys Gly Asp Ile Thr Leu Val Pro Thr Ile Asn Gly Thr
35' 40 45

Leu Pro Ile Arg Ser His His Arg Ser Ser Pro Ser Ser Pro Thr
50 55 60

Leu Glu Arg Gly Gln Met Gly Ser Arg Gln Ser His Asn Ser His Gln
65 70 75 80

Asn Phe Ser Leu Glu Leu Thr His Ala Thr Pro Ala Val Glu Val Ser
85 90 95

Gln Leu Leu Ser Met Leu His Gln Gly Gln Tyr Gln Pro Arg Pro Ser
100 105 110

Phe Arg Gly Asn Lys Tyr Ser Arg Ser Tyr Arg Tyr Ala Leu Gln Asp
115 120 125

Met Asp Lys Phe Ser Leu Lys Asp Ser Gly Arg Gly Asp Ser Glu Ala
130 135 140

Gly Asp Ser Asp Tyr Asp Leu Gly Arg Asp Ser Pro Ile Asp Arg Leu
145 150 155 160

Pro Ala Ala Met Arg Leu Cys Thr Glu Glu Cys Arg Val Leu Gly His
165 170 175

Ser Asp Gln Cys Trp Met Pro Pro Leu Pro Ser Pro Ser Asp Tyr
180 185 190

Arg Ser Asn Met Phe Ile Pro Gly Glu Glu Phe Pro Thr Gln Pro Gln
195 200 205

Gln Gln His Pro His Gln Ser Leu Glu Asp Asp Ala Gln Pro Ala Asp
210 215 220

Ser Gly Glu Lys Lys Ser Phe Ser Thr Phe Gly Lys Asp Ser Pro
225 230 235 240

Ser Glu Met Ser Ser Val Phe Gln Arg Léu Leu Pro Pro Ser Leu Asp
245 250 255

Thr Asn Cys Gly Pro Pro Leu Gly Thr His Ser Ser Val Gln Pro Ser
260 265 270

His Glu Leu Met Asp Ala Ser Glu Leu Val Ala Glu Ile Asn Lys Leu
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Leu Gln Asp Val Arg Gln Ser
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agaagccgat atgaatttgt aatttcagaa aataactcac caggggcata tatcaccact 180

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1
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Lys Phe Gln Val Thr Glu Glu Val Pro Ser Gly Thr Val Ile Gly Lys
35 40 45

Asp Ala Phe Gln Ile Leu Gln Leu Pro Gln Ala Leu Pro Val Gln Met
50 55 60

Asn Ser Glu Asp Gly Leu Leu Ser Thr Ser Arg Leu Asp Arg Glu
65 70 75 80

Lys Leu Cys Arg Gln Glu Asp Pro Cys Leu Val Ser Phe Asp Val Leu
85 90 95

Ala Thr Gly Ala Ser Ala Leu Ile His Val Glu Ile Gln Val Leu Asp
100 105 110

Ile Asn Asp His Gln Pro Gln Phe Pro Lys Asp Glu Gln Glu Leu Glu
115 120 125

Ile Ser Glu Ser Ala Ser Leu His Thr Arg Ile Pro Leu Asp Arg Ala
130 135 140

Leu Asp Gln Asp Thr Gly Pro Asn Ser Leu Tyr Ser Tyr Ser Leu Ser
145 150 155 160

Pro Ser Glu His Phe Ala Leu Asp Val Ile Val Gly Pro Asp Glu Thr
165 170 175

Lys His Ala Glu Leu Val Val Val Lys Glu Leu Asp Arg Glu Leu His
180 185 190

Ser Tyr Phe Asp Leu Val Leu Thr Ala Tyr Asp Asn Gly Asn Pro Pro
195 200 205

Lys Ser Gly Ile Ser Val Val Lys Val Asn Val Leu Asp Ser Asn Asp
210 215 220

Asn Ser Pro Val Phe Ala Glu Ser Ser Leu Ala Leu Glu Ile Pro Glu
225 230 235 240

Asp Thr Val Pro Gly Thr Leu Leu Ile Asn Leu Thr Ala Thr Asp Pro
245 250 255

Asp Gln Gly Pro Asn Gly Glu Val Glu Phe Phe Phe Gly Lys His Val
260 265 270

Ser Pro Glu Val Met Asn Thr Phe Gly Ile Asp Ala Lys Thr Gly Gln
275 280 285

Ile Ile Leu Arg Gln Ala Leu Asp Tyr Glu Lys Asn Pro Ala Tyr Glu
290 295 300

Val Asp Val Gln Ala Arg Asp Leu Gly Pro Asn Ser Ile Pro Gly His
305 310 315 320

Cys Lys Val Leu Ile Lys Val Leu Asp Val Asn Asp Asn Ala Pro Ser
325 330 335

Ile Leu Ile Thr Trp Ala Ser Gln Thr Ser Leu Val Ser Glu Asp Leu
340 345 350

Pro Arg Asp Ser Phe Ile Ala Leu Val Ser Ala Asn Asp Leu Asp Ser
355 360 365

Gly Asn Asn Gly Leu Val His Cys Trp Leu Asn Gln Glu Leu Gly His
370 375 380

Phe Arg Leu Lys Arg Thr Asn Gly Asn Thr Tyr Met Leu Leu Thr Asn
385 390 395 400

Ala Thr Leu Asp Arg Glu Gln Trp Pro Ile Tyr Thr Leu Thr Val Phe
405 410 415

Ala Gln Asp Gln Gly Pro Gln Pro Leu Ser Ala Glu Lys Glu Leu Gln
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Ile Gln Val Ser Asp Val Asn Asp Asn Ala Pro Val Phe Glu Lys Ser
435 440 445

Arg Tyr Glu Val Ser Thr Trp Glu Asn Asn Pro Pro Ser Leu His Leu
450 455 460

Ile Thr Leu Lys Ala His Asp Ala Asp Leu Gly Ser Asn Gly Lys Val
465 470 475 480

Ser Tyr Arg Ile Lys Asp Ser Pro Val Ser His Leu Val Ile Ile Asp
485 490 495

Phe Glu Thr Gly Glu Val Thr Ala Gln Arg Ser Leu Asp Tyr Glu Gln
500 505 510

Met Ala Gly Phe Glu Phe Gln Val Ile Ala Glu Asp Arg Gly Gln Pro
515 520 525

Gln Leu Ala Ser Ser Ile Ser Val Trp Val Ser Leu Leu Asp Ala Asn
530 535 540

Asp Asn Ala Pro Glu Val Ile Gln Pro Val Leu Ser Glu Gly Lys Ala
545 550 555 560

Thr Leu Ser Val Leu Val Asn Ala Ser Thr Gly His Leu Leu Leu Pro
565 570 575

Ile Glu Asn Pro Ser Gly Met Asp Pro Ala Gly Thr Gly Ile Pro Pro
580 585 590

Lys Ala Thr His Ser Pro Trp Ser Phe Leu Leu Leu Thr Ile Val Ala
595 600 605

Arg Asp Ala Asp Ser Gly Ala Asn Gly Glu Leu Phe Tyr Ser Ile Gln
610 615 620

Ser Gly Asn Asp Ala His Leu Phe Phe Leu Ser Pro Ser Leu Gly Gln
625 630 635 640

Leu Phe Ile Asn Val Thr Asn Ala Ser Ser Leu Ile Gly Ser Gln Trp
645 650 655

Asp Leu Gly Ile Val Val Glu Asp Gln Gly Ser Pro Ser Leu Gln Thr
660 665 670

Gln Val Ser Leu Lys Val Val Phe Val Thr Ser Val Asp His Leu Arg
675 680 685

Asp Ser Ala His Glu Pro Gly Val Leu Ser Thr Pro Ala Leu Ala Leu
690 695 700

Ile Cys Leu Ala Val Leu Leu Ala Ile Phe Gly Leu Leu Leu Ala Leu
705 710 715 720

Phe Val Ser Ile Cys Arg Thr Glu Arg Lys Asp Asn Arg Ala Tyr Asn
725 730 735

Cys Arg Glu Ala Glu Ser Ser Tyr Arg His Gln Pro Lys Arg Pro Gln
740 745 750

Lys His Ile Gln Lys Ala Asp Ile His Leu Val Pro Val Leu Arg Ala
755 760 765

His Glu Asn Glu Thr Asp Glu Val Arg Pro Ser His Lys Asp Thr Ser
770 775 780

Lys Glu Thr Leu Met Glu Ala Gly Trp Asp Ser Cys Leu Glu Ala Pro
785 790 795 800

Phe His Leu Thr Pro Thr Leu Tyr Arg Thr Leu Arg Asn Gln Gly Asn
805 810 815

Gln Gly Glu Leu Ala Glu Ser Gln Glu Val Leu Gln Asp Thr Phe Asn
820 825 830

Phe Leu Phe Asn His Pro Arg Gln Arg Asn Ala Ser Arg Glu Asn Leu
835 840 845

Asn Leu Pro Glu Ser Pro Pro Ala Val Arg Gln Pro Leu Leu Arg Pro
850 855 860

Leu Lys Val Pro Gly Ser Pro Ile Ala Arg Ala Thr Gly Asp Gln Asp
865 870 875 880

Lys Glu Ala Pro Gln Ser Pro Pro Ala Ser Ser Ala Thr Leu Arg
885 890 895

Arg Gln Arg Asn Phe Asn Gly Lys Val Ser Pro Arg Gly Glu Ser Gly
900 905 910

Pro His Gln Ile Leu Arg Ser Leu Val Arg Leu Ser Val Ala Ala Phe
915 920 925

Ala Glu Arg Asn Pro Val Glu Glu Pro Ala Gly Asp Ser Pro Pro Val
930 935 940

Gln Gln Ile Ser Gln Leu Leu Ser Leu Leu His Gln Gly Gln Phe Gln
945 950 955 960

Pro Lys Pro Asn His Arg Gly Asn Lys Tyr Leu Ala Lys Pro Gly Gly
965 970 975

Ser Ser Arg Gly Thr Ile Pro Asp Thr Glu Gly Leu Val Gly Leu Lys
980 985 990

Pro Ser Gly Gln Ala Glu Pro Asp Leu Glu Glu Gly Pro Pro Ser Pro
995 1000 1005

Leu Ser Ser Leu Leu Asp Pro Asn Thr Gly Leu Ala Leu Asp Lys Leu
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Ser Pro Pro Asp Pro Ala Trp Met Ala Arg Leu Ser Leu Pro Leu Thr
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Ser Glu Glu Pro Arg Thr Phe Gln Thr Phe Gly Lys Thr Val Gly Pro
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Gly Pro Glu Leu Ser Pro Thr Gly Thr Arg Leu Ala Ser Thr Phe Val
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Ser Glu Met Ser Ser Leu Leu Glu Met Leu Leu Gly Gln His Thr Val
1075 1080 1085

Pro Val Glu Ala Ala Ser Ala Ala Leu Arg Arg Leu Ser Val Cys Gly
1090 1095 1100

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Ala Gln Gly Arg Lys Lys Ala Ala Glu Ser Arg Leu Gly Cys Gly
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<213> Homo sapiens

<400> 51

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<211> 1095
<212> DNA
<213> Homo sapiens

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<211> 365
<212> PRT
<213> Homo sapiens

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35 40 45

Asn Ile Phe Tyr Ser Gln Pro Leu Asn Ile Thr Ser Met Gly Ile Thr
50 55 60

Trp Phe Trp Lys Ser Leu Thr Phe Asp Lys Glu Val Lys Val Phe Glu
65 70 75 80

Phe Phe Gly Asp His Gln Glu Ala Phe Arg Pro Gly Ala Ile Val Ser
85 90 95

Pro Trp Arg Leu Lys Ser Gly Asp Ala Ser Leu Arg Leu Pro Gly Ile
100 105 110

Gln Leu Glu Glu Ala Gly Glu Tyr Arg Cys Glu Val Val Val Thr Pro
115 120 125

Leu Lys Ala Gln Gly Thr Val Gln Leu Glu Val Val Ala Ser Pro Ala
130 135 140

Ser Arg Leu Leu Leu Asp Gln Val Gly Met Lys Glu Asn Glu Asp Lys
145 150 155 160

Tyr Met Cys Glu Ser Ser Gly Phe Tyr Pro Glu Ala Ile Asn Ile Thr
165 170 175

Trp Glu Lys Gln Thr Gln Lys Phe Pro His Pro Ile Glu Ile Ser Glu
180 185 190

PDB ID: 1C8D

Asp Val Ile Thr Gly Pro Thr Ile Lys Asn Met Asp Gly Thr Phe Asn
195 200 205

Val Thr Ser Cys Leu Lys Leu Asn Ser Ser Gln Glu Asp Pro Gly Thr
210 215 220

Val Tyr Gln Cys Val Val Arg His Ala Ser Leu His Thr Pro Leu Arg
225 230 235 240

Ser Asn Phe Thr Leu Thr Ala Ala Arg His Ser Leu Ser Glu Thr Glu
245 250 255

Lys Thr Asp Asn Phe Ser Ile His Trp Trp Pro Ile Ser Phe Ile Gly
260 265 270

Val Gly Leu Val Leu Leu Ile Val Leu Ile Pro Trp Lys Lys Val Arg
275 280 285

Gly Ser Lys Ala Lys Phe Ser Pro Val Ser Trp Ala Ser Lys Lys Leu
290 295 300

Leu Glu Gln Leu Leu Pro Thr Leu Gln Ala Ser Arg Asp Arg Pro Ala
305 310 315 320

Gly Lys Asp Phe Val Ser Pro Ser Ser Pro Ser Gly Val Gly Asn Val
325 330 335

Gly Cys Val Pro Ile Gln Phe Pro Ile Thr Glu Asp Leu Ala Val Thr
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Tyr His Leu Thr Ser Val Trp Trp Phe Val Thr Leu Gly
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<210> 54

<211> 341

<212> PRT

<213> Homo sapiens

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Asn Ile Thr Ser Met Gly Ile Thr Trp Phe Trp Lys Ser Leu Thr Phe

35 40 45

Asp	Lys	Glu	Val	Lys	Val	Phe	Glu	Phe	Phe	Gly	Asp	His	Gln	Glu	Ala	
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Ala	Ser	Leu	Arg	Leu	Pro	Gly	Ile	Gln	Leu	Glu	Glu	Ala	Gly	Glu	Tyr	
					85			90			95					
Arg	Cys	Glu	Val	Val	Val	Thr	Pro	Leu	Lys	Ala	Gln	Gly	Thr	Val	Gln	
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Leu	Glu	Val	Val	Ala	Ser	Pro	Ala	Ser	Arg	Leu	Leu	Asp	Gln	Val		
					115			120			125					
Gly	Met	Lys	Glu	Asn	Glu	Asp	Lys	Tyr	Met	Cys	Glu	Ser	Ser	Gly	Phe	
					130			135			140					
Tyr	Pro	Glu	Ala	Ile	Asn	Ile	Thr	Trp	Glu	Lys	Gln	Thr	Gln	Lys	Phe	
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Pro	His	Pro	Ile	Glu	Ile	Ser	Glu	Asp	Val	Ile	Thr	Gly	Pro	Thr	Ile	
					165			170			175					
Lys	Asn	Met	Asp	Gly	Thr	Phe	Asn	Val	Thr	Ser	Cys	Leu	Lys	Leu	Asn	
					180			185			190					
Ser	Ser	Gln	Glu	Asp	Pro	Gly	Thr	Val	Tyr	Gln	Cys	Val	Val	Arg	His	
					195			200			205					
Ala	Ser	Leu	His	Thr	Pro	Leu	Arg	Ser	Asn	Phe	Thr	Leu	Thr	Ala	Ala	
					210			215			220					
Arg	His	Ser	Leu	Ser	Glu	Thr	Glu	Lys	Thr	Asp	Asn	Phe	Ser	Ile	His	
225					230				235			240				
Trp	Trp	Pro	Ile	Ser	Phe	Ile	Gly	Val	Gly	Leu	Val	Leu	Leu	Ile	Val	
					245			250			255					
Leu	Ile	Pro	Trp	Lys	Lys	Val	Arg	Gly	Ser	Lys	Ala	Lys	Phe	Ser	Pro	
					260			265			270					
Val	Ser	Trp	Ala	Ser	Lys	Lys	Leu	Leu	Glu	Gln	Leu	Leu	Pro	Thr	Leu	
					275			280			285					
Gln	Ala	Ser	Arg	Asp	Arg	Pro	Ala	Gly	Lys	Asp	Phe	Val	Ser	Pro	Ser	

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Ser Pro Ser Gly Val Gly Asn Val Gly Cys Val Pro Ile Gln Phe Pro	290	295	300
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Phe Val Thr Leu Gly			
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<210> 56			
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Ile Thr Ser Met Gly Ile Thr Trp Phe Trp Lys Ser Leu Thr Phe Asp			
35		40	45
Lys Glu Val Lys Val Phe Glu Phe Phe Gly Asp His Gln Glu Ala Phe			
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Arg Pro Gly Ala Ile Val Ser Pro Trp Arg Leu Lys Ser Gly Asp Ala			
65		70	75
			80
Ser Leu Arg Leu Pro Gly Ile Gln Leu Glu Glu Ala Gly Glu Tyr Arg			
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Cys Glu Val Val Val Thr Pro Leu Lys Ala Gln Gly Thr Val Gln Leu
100 105 110

Glu Val Val Ala Ser Pro Ala Ser Arg Leu Leu Leu Asp Gln Val Gly
115 120 125

Met Lys Glu Asn Glu Asp Lys Tyr Met Cys Glu Ser Ser Gly Phe Tyr
130 135 140

Pro Glu Ala Ile Asn Ile Thr Trp Glu Lys Gln Thr Gln Lys Phe Pro
145 150 155 160

His Pro Ile Glu Ile Ser Glu Asp Val Ile Thr Gly Pro Thr Ile Lys
165 170 175

Asn Met Asp Gly Thr Phe Asn Val Thr Ser Cys Leu Lys Leu Asn Ser
180 185 190

Ser Gln Glu Asp Pro Gly Thr Val Tyr Gln Cys Val Val Arg His Ala
195 200 205

Ser Leu His Thr Pro Leu Arg Ser Asn Phe Thr Leu Thr Ala Ala Arg
210 215 220

His Ser Leu Ser Glu Thr Glu Lys Thr Asp Asn Phe Ser Ile His
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<210> 57

<211> 84

<212> PRT

<213> Homo sapiens

<400> 57

Asn Asp Asn Val Thr Ile Phe Cys Asn Ile Phe Tyr Ser Gln Pro Leu
1 5 10 15

Asn Ile Thr Ser Met Gly Ile Thr Trp Phe Trp Lys Ser Leu Thr Phe
20 25 30

Asp Lys Glu Val Lys Val Phe Glu Phe Phe Gly Asp His Gln Glu Ala
35 40 45

Phe Arg Pro Gly Ala Ile Val Ser Pro Trp Arg Leu Lys Ser Gly Asp
50 55 60

Ala Ser Leu Arg Leu Pro Gly Ile Gln Leu Glu Ala Gly Glu Tyr

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Arg Cys Glu Val

<210> 58

<211> 68

<212> PRT

<213> Homo sapiens

<400> 58

Cys Glu Ser Ser Gly Phe Tyr Pro Glu Ala Ile Asn Ile Thr Trp Glu
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Lys Gln Thr Gln Lys Phe Pro His Pro Ile Glu Ile Ser Glu Asp Val
20 25 30

Ile Thr Gly Pro Thr Ile Lys Asn Met Asp Gly Thr Phe Asn Val Thr
35 40 45

Ser Cys Leu Lys Leu Asn Ser Ser Gln Glu Asp Pro Gly Thr Val Tyr
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Gln Cys Val Val
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<210> 59

<211> 18

<212> PRT

<213> Homo sapiens

<400> 59

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<210> 60

<211> 83

<212> PRT

<213> Homo sapiens

<400> 60

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Ser Arg Asp Arg Pro Ala Gly Lys Asp Phe Val Ser Pro Ser Ser Pro
 35 40 45

Ser Gly Val Gly Asn Val Gly Cys Val Pro Ile Gln Phe Pro Ile Thr
 50 55 60

Glu Asp Leu Ala Val Thr Tyr His Leu Thr Ser Val Trp Trp Phe Val
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Thr Leu Gly

<210> 61

<211> 1402

<212> DNA

<213> Homo sapiens

<400> 61

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<210> 72
<211> 2145
<212> DNA
<213> *Homo sapiens*

<400> 72
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tgtggacacc tagtgactta tcaggatagt ggcacaatga catctaagaa ttatcccggg 180
acctacccca atcacactgt ttgcgaaaag acaaattacag taccaaaaggg gaaaagactg 240
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cagcgcaaaag ggatcagtcg atatggagg attctggcca atgggtttct ttgcaggat 720
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tttgaacctg acgggcaaat cagagcttct tcctcatggc agtcgtcaa tgagagtgg 840
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gactgcctca cacccctcaa ccagacggcc atgactgccc ttttg 2145

<210> 73
<211> 715
<212> PRT
<213> Homo sapiens

<400> 73
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Arg Gly Leu Leu Ala Leu Leu Leu Ala Val Ser Ala Pro Leu Arg Leu
20 25 30

Gln Ala Glu Glu Leu Gly Asp Gly Cys Gly His Leu Val Thr Tyr Gln
35 40 45

Asp Ser Gly Thr Met Thr Ser Lys Asn Tyr Pro Gly Thr Tyr Pro Asn
50 55 60

His Thr Val Cys Glu Lys Thr Ile Thr Val Pro Lys Gly Lys Arg Leu
65 70 75 80

Ile Leu Arg Leu Gly Asp Leu Asp Ile Glu Ser Gln Thr Cys Ala Ser
85 90 95

Asp Tyr Leu Leu Phe Thr Ser Ser Asp Gln Tyr Gly Pro Tyr Cys
100 105 110

Gly Ser Met Thr Val Pro Lys Glu Leu Leu Leu Asn Thr Ser Glu Val
115 120 125

Thr Val Arg Phe Glu Ser Gly Ser His Ile Ser Gly Arg Gly Phe Leu
130 135 140

Leu Thr Tyr Ala Ser Ser Asp His Pro Asp Leu Ile Thr Cys Leu Glu
145 150 155 160

Arg Ala Ser His Tyr Leu Lys Thr Glu Tyr Ser Lys Phe Cys Pro Ala
165 170 175

Gly Cys Arg Asp Val Ala Gly Asp Ile Ser Gly Asn Met Val Asp Gly
180 185 190

Tyr Arg Asp Thr Ser Leu Leu Cys Lys Ala Ala Ile His Ala Gly Ile
195 200 205

Ile Ala Asp Glu Leu Gly Gly Gln Ile Ser Val Leu Gln Arg Lys Gly
210 215 220

Ile Ser Arg Tyr Glu Gly Ile Leu Ala Asn Gly Val Leu Ser Arg Asp
225 230 235 240

Gly Ser Leu Ser Asp Lys Arg Phe Leu Phe Thr Ser Asn Gly Cys Ser
245 250 255

Arg Ser Leu Ser Phe Glu Pro Asp Gly Gln Ile Arg Ala Ser Ser Ser
260 265 270

Trp Gln Ser Val Asn Glu Ser Gly Asp Gln Val His Trp Ser Pro Gly
275 280 285

Gln Ala Arg Leu Gln Asp Gln Gly Pro Ser Trp Ala Ser Gly Asp Ser
290 295 300

Ser Asn Asn His Lys Pro Arg Glu Trp Leu Glu Ile Asp Leu Gly Glu
305 310 315 320

Lys Lys Lys Ile Thr Gly Ile Arg Thr Thr Gly Ser Thr Gln Ser Asn
325 330 335

Phe Asn Phe Tyr Val Lys Ser Phe Val Met Asn Phe Lys Asn Asn Asn
340 345 350

Ser Lys Trp Lys Thr Tyr Lys Gly Ile Val Asn Asn Glu Glu Lys Val
355 360 365

Phe Gln Gly Asn Ser Asn Phe Arg Asp Pro Val Gln Asn Asn Phe Ile
370 375 380

Pro Pro Ile Val Ala Arg Tyr Val Arg Val Val Pro Gln Thr Trp His
385 390 395 400

Gln Arg Ile Ala Leu Lys Val Glu Leu Ile Gly Cys Gln Ile Thr Gln
405 410 415

Gly Asn Asp Ser Leu Val Trp Arg Lys Thr Ser Gln Ser Thr Ser Val
420 425 430

Ser Thr Lys Lys Glu Asp Glu Thr Ile Thr Arg Pro Ile Pro Ser Glu
435 440 445

Glu Thr Ser Thr Gly Ile Asn Ile Thr Thr Val Ala Ile Pro Leu Val
450 455 460

Leu Leu Val Val Leu Val Phe Ala Gly Met Gly Ile Phe Ala Ala Phe
465 470 475 480

Arg Lys Lys Lys Lys Gly Ser Pro Tyr Gly Ser Ala Glu Ala Gln
485 490 495

Lys Thr Asp Cys Trp Lys Gln Ile Lys Tyr Pro Phe Ala Arg His Gln
500 505 510

Ser Ala Glu Phe Thr Ile Ser Tyr Asp Asn Glu Lys Glu Met Thr Gln
515 520 525

Lys Leu Asp Leu Ile Thr Ser Asp Met Ala Asp Tyr Gln Gln Pro Leu
530 535 540

Met Ile Gly Thr Gly Thr Val Thr Arg Lys Gly Ser Thr Phe Arg Pro
545 550 555 560

Met Asp Thr Asp Ala Glu Glu Ala Gly Val Ser Thr Asp Ala Gly Gly
565 570 575

His Tyr Asp Cys Pro Gln Arg Ala Gly Arg His Glu Tyr Ala Leu Pro
580 585 590

Leu Ala Pro Pro Glu Pro Glu Tyr Ala Thr Pro Ile Val Glu Arg His
595 600 605

Val Leu Arg Ala His Thr Phe Ser Ala Gln Ser Gly Tyr Arg Val Pro
610 615 620

Gly Pro Gln Pro Gly His Lys His Ser Leu Ser Ser Gly Gly Phe Ser
625 630 635 640

Pro Val Ala Gly Val Gly Ala Gln Asp Gly Asp Tyr Gln Arg Pro His
645 650 655

Ser Ala Gln Pro Ala Asp Arg Gly Tyr Asp Arg Pro Lys Ala Val Ser
660 665 670

Ala Leu Ala Thr Glu Ser Gly His Pro Asp Ser Gln Lys Pro Pro Thr
675 680 685

His Pro Gly Thr Ser Asp Ser Tyr Ser Ala Pro Arg Asp Cys Leu Thr
690 695 700

Pro Leu Asn Gln Thr Ala Met Thr Ala Leu Leu
705 710 715

<210> 74

<211> 34

<212> PRT

<213> Homo sapiens

<400> 74

Met Val Pro Gly Ala Arg Gly Gly Ala Leu Ala Arg Ala Ala Gly
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Arg Gly Leu Leu Ala Leu Leu Ala Val Ser Ala Pro Leu Arg Leu
20 25 30

Gln Ala

<210> 75

<211> 681

<212> PRT

<213> Homo sapiens

<400> 75

Glu Glu Leu Gly Asp Gly Cys Gly His Leu Val Thr Tyr Gln Asp Ser
1 5 10 15

Gly Thr Met Thr Ser Lys Asn Tyr Pro Gly Thr Tyr Pro Asn His Thr
20 25 30

Val Cys Glu Lys Thr Ile Thr Val Pro Lys Gly Lys Arg Leu Ile Leu
35 40 45

Arg Leu Gly Asp Leu Asp Ile Glu Ser Gln Thr Cys Ala Ser Asp Tyr
50 55 60

Leu Leu Phe Thr Ser Ser Ser Asp Gln Tyr Gly Pro Tyr Cys Gly Ser

DRAFT

65	70	75	80
Met Thr Val Pro Lys Glu Leu Leu Asn Thr Ser Glu Val Thr Val			
85	90	95	
Arg Phe Glu Ser Gly Ser His Ile Ser Gly Arg Gly Phe Leu Leu Thr			
100	105	110	
Tyr Ala Ser Ser Asp His Pro Asp Leu Ile Thr Cys Leu Glu Arg Ala			
115	120	125	
Ser His Tyr Leu Lys Thr Glu Tyr Ser Lys Phe Cys Pro Ala Gly Cys			
130	135	140	
Arg Asp Val Ala Gly Asp Ile Ser Gly Asn Met Val Asp Gly Tyr Arg			
145	150	155	160
Asp Thr Ser Leu Leu Cys Lys Ala Ala Ile His Ala Gly Ile Ile Ala			
165	170	175	
Asp Glu Leu Gly Gly Gln Ile Ser Val Leu Gln Arg Lys Gly Ile Ser			
180	185	190	
Arg Tyr Glu Gly Ile Leu Ala Asn Gly Val Leu Ser Arg Asp Gly Ser			
195	200	205	
Leu Ser Asp Lys Arg Phe Leu Phe Thr Ser Asn Gly Cys Ser Arg Ser			
210	215	220	
Leu Ser Phe Glu Pro Asp Gly Gln Ile Arg Ala Ser Ser Ser Trp Gln			
225	230	235	240
Ser Val Asn Glu Ser Gly Asp Gln Val His Trp Ser Pro Gly Gln Ala			
245	250	255	
Arg Leu Gln Asp Gln Gly Pro Ser Trp Ala Ser Gly Asp Ser Ser Asn			
260	265	270	
Asn His Lys Pro Arg Glu Trp Leu Glu Ile Asp Leu Gly Glu Lys Lys			
275	280	285	
Lys Ile Thr Gly Ile Arg Thr Thr Gly Ser Thr Gln Ser Asn Phe Asn			
290	295	300	
Phe Tyr Val Lys Ser Phe Val Met Asn Phe Lys Asn Asn Asn Ser Lys			
305	310	315	320
Trp Lys Thr Tyr Lys Gly Ile Val Asn Asn Glu Glu Lys Val Phe Gln			

325 330 335

Gly Asn Ser Asn Phe Arg Asp Pro Val Gln Asn Asn Phe Ile Pro Pro
340 345 350

Ile Val Ala Arg Tyr Val Arg Val Val Pro Gln Thr Trp His Gln Arg
355 360 365

Ile Ala Leu Lys Val Glu Leu Ile Gly Cys Gln Ile Thr Gln Gly Asn
370 375 380

Asp Ser Leu Val Trp Arg Lys Thr Ser Gln Ser Thr Ser Val Ser Thr
385 390 395 400

Lys Lys Glu Asp Glu Thr Ile Thr Arg Pro Ile Pro Ser Glu Glu Thr
405 410 415

Ser Thr Gly Ile Asn Ile Thr Thr Val Ala Ile Pro Leu Val Leu Leu
420 425 430

Val Val Leu Val Phe Ala Gly Met Gly Ile Phe Ala Ala Phe Arg Lys
435 440 445

Lys Lys Lys Lys Gly Ser Pro Tyr Gly Ser Ala Glu Ala Gln Lys Thr
450 455 460

Asp Cys Trp Lys Gln Ile Lys Tyr Pro Phe Ala Arg His Gln Ser Ala
465 470 475 480

Glu Phe Thr Ile Ser Tyr Asp Asn Glu Lys Glu Met Thr Gln Lys Leu
485 490 495

Asp Leu Ile Thr Ser Asp Met Ala Asp Tyr Gln Gln Pro Leu Met Ile
500 505 510

Gly Thr Gly Thr Val Thr Arg Lys Gly Ser Thr Phe Arg Pro Met Asp
515 520 525

Thr Asp Ala Glu Glu Ala Gly Val Ser Thr Asp Ala Gly Gly His Tyr
530 535 540

Asp Cys Pro Gln Arg Ala Gly Arg His Glu Tyr Ala Leu Pro Leu Ala
545 550 555 560

Pro Pro Glu Pro Glu Tyr Ala Thr Pro Ile Val Glu Arg His Val Leu
565 570 575

Arg Ala His Thr Phe Ser Ala Gln Ser Gly Tyr Arg Val Pro Gly Pro

PROTEIN SEQUENCES

580

585

590

Gln Pro Gly His Lys His Ser Leu Ser Ser Gly Gly Phe Ser Pro Val
595 600 605

Ala Gly Val Gly Ala Gln Asp Gly Asp Tyr Gln Arg Pro His Ser Ala
610 615 620

Gln Pro Ala Asp Arg Gly Tyr Asp Arg Pro Lys Ala Val Ser Ala Leu
625 630 635 640

Ala Thr Glu Ser Gly His Pro Asp Ser Gln Lys Pro Pro Thr His Pro
645 650 655

Gly Thr Ser Asp Ser Tyr Ser Ala Pro Arg Asp Cys Leu Thr Pro Leu
660 665 670

Asn Gln Thr Ala Met Thr Ala Leu Leu
675 680

<210> 76
<211> 421
<212> PRT
<213> Homo sapiens

<400> 76
Glu Glu Leu Gly Asp Gly Cys Gly His Leu Val Thr Tyr Gln Asp Ser
1 5 10 15

Gly Thr Met Thr Ser Lys Asn Tyr Pro Gly Thr Tyr Pro Asn His Thr
20 25 30

Val Cys Glu Lys Thr Ile Thr Val Pro Lys Gly Lys Arg Leu Ile Leu
35 40 45

Arg Leu Gly Asp Leu Asp Ile Glu Ser Gln Thr Cys Ala Ser Asp Tyr
50 55 60

Leu Leu Phe Thr Ser Ser Asp Gln Tyr Gly Pro Tyr Cys Gly Ser
65 70 75 80

Met Thr Val Pro Lys Glu Leu Leu Asn Thr Ser Glu Val Thr Val
85 90 95

Arg Phe Glu Ser Gly Ser His Ile Ser Gly Arg Gly Phe Leu Leu Thr
100 105 110

Tyr Ala Ser Ser Asp His Pro Asp Leu Ile Thr Cys Leu Glu Arg Ala
115 120 125

Ser His Tyr Leu Lys Thr Glu Tyr Ser Lys Phe Cys Pro Ala Gly Cys
130 135 140

Arg Asp Val Ala Gly Asp Ile Ser Gly Asn Met Val Asp Gly Tyr Arg
145 150 155 160

Asp Thr Ser Leu Leu Cys Lys Ala Ala Ile His Ala Gly Ile Ile Ala
165 170 175

Asp Glu Leu Gly Gly Gln Ile Ser Val Leu Gln Arg Lys Gly Ile Ser
180 185 190

Arg Tyr Glu Gly Ile Leu Ala Asn Gly Val Leu Ser Arg Asp Gly Ser
195 200 205

Leu Ser Asp Lys Arg Phe Leu Phe Thr Ser Asn Gly Cys Ser Arg Ser
210 215 220

Leu Ser Phe Glu Pro Asp Gly Gln Ile Arg Ala Ser Ser Ser Trp Gln
225 230 235 240

Ser Val Asn Glu Ser Gly Asp Gln Val His Trp Ser Pro Gly Gln Ala
245 250 255

Arg Leu Gln Asp Gln Gly Pro Ser Trp Ala Ser Gly Asp Ser Ser Asn
260 265 270

Asn His Lys Pro Arg Glu Trp Leu Glu Ile Asp Leu Gly Glu Lys Lys
275 280 285

Lys Ile Thr Gly Ile Arg Thr Thr Gly Ser Thr Gln Ser Asn Phe Asn
290 295 300

Phe Tyr Val Lys Ser Phe Val Met Asn Phe Lys Asn Asn Asn Ser Lys
305 310 315 320

Trp Lys Thr Tyr Lys Gly Ile Val Asn Asn Glu Glu Lys Val Phe Gln
325 330 335

Gly Asn Ser Asn Phe Arg Asp Pro Val Gln Asn Asn Phe Ile Pro Pro
340 345 350

Ile Val Ala Arg Tyr Val Arg Val Val Pro Gln Thr Trp His Gln Arg
355 360 365

Ile Ala Leu Lys Val Glu Leu Ile Gly Cys Gln Ile Thr Gln Gly Asn
370 375 380

Asp Ser Leu Val Trp Arg Lys Thr Ser Gln Ser Thr Ser Val Ser Thr
385 390 395 400

Lys Lys Glu Asp Glu Thr Ile Thr Arg Pro Ile Pro Ser Glu Glu Thr
405 410 415

Ser Thr Gly Ile Asn
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<210> 77

<211> 25

<212> PRT

<213> Homo sapiens

<400> 77

Ile Thr Thr Val Ala Ile Pro Leu Val Leu Leu Val Val Leu Val Phe
1 5 10 15

Ala Gly Met Gly Ile Phe Ala Ala Phe
20 25

<210> 78

<211> 235

<212> PRT

<213> Homo sapiens

<400> 78

Arg Lys Lys Lys Lys Gly Ser Pro Tyr Gly Ser Ala Glu Ala Gln
1 5 10 15

Lys Thr Asp Cys Trp Lys Gln Ile Lys Tyr Pro Phe Ala Arg His Gln
20 25 30

Ser Ala Glu Phe Thr Ile Ser Tyr Asp Asn Glu Lys Glu Met Thr Gln
35 40 45

Lys Leu Asp Leu Ile Thr Ser Asp Met Ala Asp Tyr Gln Gln Pro Leu
50 55 60

Met Ile Gly Thr Gly Thr Val Thr Arg Lys Gly Ser Thr Phe Arg Pro
65 70 75 80

Met Asp Thr Asp Ala Glu Glu Ala Gly Val Ser Thr Asp Ala Gly Gly

* * * * *

85

90

95

His Tyr Asp Cys Pro Gln Arg Ala Gly Arg His Glu Tyr Ala Leu Pro
100 105 110

Leu Ala Pro Pro Glu Pro Glu Tyr Ala Thr Pro Ile Val Glu Arg His
115 120 125

Val Leu Arg Ala His Thr Phe Ser Ala Gln Ser Gly Tyr Arg Val Pro
130 135 140

Gly Pro Gln Pro Gly His Lys His Ser Leu Ser Ser Gly Gly Phe Ser
145 150 155 160

Pro Val Ala Gly Val Gly Ala Gln Asp Gly Asp Tyr Gln Arg Pro His
165 170 175

Ser Ala Gln Pro Ala Asp Arg Gly Tyr Asp Arg Pro Lys Ala Val Ser
180 185 190

Ala Leu Ala Thr Glu Ser Gly His Pro Asp Ser Gln Lys Pro Pro Thr
195 200 205

His Pro Gly Thr Ser Asp Ser Tyr Ser Ala Pro Arg Asp Cys Leu Thr
210 215 220

Pro Leu Asn Gln Thr Ala Met Thr Ala Leu Leu
225 230 235

<210> 79
<400> 79
000

<210> 80
<400> 80
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<210> 81
<211> 4074
<212> DNA
<213> Homo sapiens

<400> 81
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taggcaagcc acttcatttt tcagaacttg tttactcatt tataatatgg gaataaaaat 3120
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gatttgaagt ttagatctt atccaagaag tagctttca atttgstaga agcttaatgt 3780
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tgtgcaagtc agagaagggt gcctaaaaa tggttgtggcc aagccacatg agatcaaaga 3900
cacactttt atgacctca atgtggccc agcctaggtc agccaaacccc catccaacc 3960
tttagactcac gaacaaaatcc acctgagatc agcagagcca ccctagatca gctgaaactc 4020
taaggcacaaa aataaaaact tatcactqta aaaaaaaaaa aaaaaaaaaa aqaa 4074

<210> 82
<211> 564
<212> DNA
<213> *Homo sapiens*

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<400> 82
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accaggagct atggaacagt ctcacagatt ttggggagca gttccccaaag tcccaacggc 180
ttcattacca caaggagcta tggAACAGTC tgccccaaag actggaaatt ttatcaagca 240
agatgtttt tcttatccac ttctgaatca tcttggaaatg aaagcaggga ctttgc当地 300
ggaaaaggat ccacattggc aattgtcaac acgccagaga aactgaagtt tcttcaggac 360
ataactgatg ctgagaagta ttttattggc ttaatttacc atcgtgaaga gaaaaggatgg 420
cgttggatca acaactctgt gttcaatggc aatgttacca atcagaatca gaatttcaac 480
tgtgcgacca ttggcctaac aaagacattt gatgctgcat catgtgacat cagctaccgc 540
aggatctgtg aqaagaatgc caaa 564
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<210> 83
<211> 188
<212> PRT
<213> *Homo sapiens*

<400> 83
Met Asn Trp His Met Ile Ile Ser Gly Leu Ile Val Val Val Leu Lys
1 5 10 15

Val Val Gly Met Thr Leu Phe Leu Leu Tyr Phe Pro Gln Ile Phe Asn

20

25

30

Lys Ser Asn Asp Gly Phe Thr Thr Arg Ser Tyr Gly Thr Val Ser
35 40 45

Gln Ile Phe Gly Ser Ser Pro Ser Pro Asn Gly Phe Ile Thr Thr
50 55 60

Arg Ser Tyr Gly Thr Val Cys Pro Lys Asp Trp Glu Phe Tyr Gln Ala
65 70 75 80

Arg Cys Phe Phe Leu Ser Thr Ser Glu Ser Ser Trp Asn Glu Ser Arg
85 90 95

Asp Phe Cys Lys Gly Lys Gly Ser Thr Leu Ala Ile Val Asn Thr Pro
100 105 110

Glu Lys Leu Lys Phe Leu Gln Asp Ile Thr Asp Ala Glu Lys Tyr Phe
115 120 125

Ile Gly Leu Ile Tyr His Arg Glu Glu Lys Arg Trp Arg Trp Ile Asn
130 135 140

Asn Ser Val Phe Asn Gly Asn Val Thr Asn Gln Asn Gln Asn Phe Asn
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<212> PRT

<213> Homo sapiens

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Leu Leu Tyr

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<212> PRT

<213> Homo sapiens

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20 25 30

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35 40 45

Trp Glu Phe Tyr Gln Ala Arg Cys Phe Phe Leu Ser Thr Ser Glu Ser
50 55 60

Ser Trp Asn Glu Ser Arg Asp Phe Cys Lys Gly Lys Gly Ser Thr Leu
65 70 75 80

Ala Ile Val Asn Thr Pro Glu Lys Leu Lys Phe Leu Gln Asp Ile Thr
85 90 95

Asp Ala Glu Lys Tyr Phe Ile Gly Leu Ile Tyr His Arg Glu Glu Lys
100 105 110

Arg Trp Arg Trp Ile Asn Asn Ser Val Phe Asn Gly Asn Val Thr Asn
115 120 125

Gln Asn Gln Asn Phe Asn Cys Ala Thr Ile Gly Leu Thr Lys Thr Phe
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<211> 187

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<213> Homo sapiens

<400> 86

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PDB ID: 1Z00

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50 55 60

Arg Ser Tyr Gly Thr Val Cys Pro Lys Asp Trp Glu Phe Tyr Gln Ala
65 70 75 80

Arg Cys Phe Phe Leu Ser Thr Ser Glu Ser Ser Trp Asn Glu Ser Arg
85 90 95

Asp Phe Cys Lys Gly Lys Ser Thr Leu Ala Ile Val Asn Thr Pro
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Glu Lys Leu Phe Leu Gln Asp Ile Thr Asp Ala Glu Lys Tyr Phe Ile
115 120 125

Gly Leu Ile Tyr His Arg Glu Glu Lys Arg Trp Arg Trp Ile Asn Asn
130 135 140

Ser Val Phe Asn Gly Asn Val Thr Asn Gln Asn Gln Asn Phe Asn Cys
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30

Lys Ser Asn Asp Gly Phe Val Pro Thr Glu Ser Tyr Gly Thr Thr Ser
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Val Gln Asn Val Ser Gln Ile Phe Gly Arg Asn Asp Glu Ser Thr Met
50 55 60

Pro Thr Arg Ser Tyr Gly Thr Val Cys Pro Arg Asn Trp Asp Phe His
65 70 75 80

Gln Gly Lys Cys Phe Phe Phe Ser Phe Ser Glu Ser Pro Trp Lys Asp
85 90 95

Ser Met Asp Tyr Cys Ala Thr Gln Gly Ser Thr Leu Ala Ile Val Asn
100 105 110

Thr Pro Glu Lys Leu Lys Tyr Leu Gln Asp Ile Ala Gly Ile Glu Asn
115 120 125

Tyr Phe Ile Gly Leu Val Arg Gln Pro Gly Glu Lys Lys Trp Arg Trp
130 135 140

Ile Asn Asn Ser Val Phe Asn Gly Asn Val Thr Asn Gln Asp Gln Asn
145 150 155 160

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<210> 90

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<210> 91

<211> 4018

<212> DNA

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生物工程系

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20 25 30

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35 40 45

Gln Ile Phe Gly Ser Ser Pro Ser Pro Asn Gly Phe Ile Thr Thr
50 55 60

Arg Ser Tyr Gly Thr Val Cys Pro Lys Asp Trp Glu Phe Tyr Gln Ala
65 70 75 80

Arg Cys Phe Phe Leu Ser Thr Ser Glu Ser Ser Trp Asn Glu Ser Arg
85 90 95

Asp Phe Cys Lys Gly Lys Gly Ser Thr Leu Ala Ile Val Asn Thr Pro
100 105 110

Glu Lys Leu Lys Phe Leu Gln Asp Ile Thr Asp Ala Glu Lys Tyr Phe
115 120 125

Ile Gly Leu Ile Tyr His Arg Glu Glu Lys Arg Trp Arg Trp Ile Asn
130 135 140

Asn Ser Val Phe Asn Gly Lys Tyr Val Asn Met Pro Gln Phe Pro Gly
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Asp Leu Gly Leu Leu Gln Lys Thr Lys Pro Glu Ile Ala Gly Phe Thr
165 170 175

Leu Glu

<210> 94
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Phe Leu Leu Tyr Phe
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35 40 45

Glu Phe Tyr Gln Ala Arg Cys Phe Phe Leu Ser Thr Ser Glu Ser Ser
50 55 60

Trp Asn Glu Ser Arg Asp Phe Cys Lys Gly Lys Gly Ser Thr Leu Ala
65 70 75 80

Ile Val Asn Thr Pro Glu Lys Leu Lys Phe Leu Gln Asp Ile Thr Asp
85 90 95

Ala Glu Lys Tyr Phe Ile Gly Leu Ile Tyr His Arg Glu Glu Lys Arg
100 105 110

Trp Arg Trp Ile Asn Asn Ser Val Phe Asn Gly Lys Tyr Val Asn Met
115 120 125

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Lys Ser Asn Asp Gly Phe Thr Thr Arg Ser Tyr Gly Thr Val Cys
35 40 45

Pro Lys Asp Trp Glu Phe Tyr Gln Ala Arg Cys Phe Phe Leu Ser Thr

TIGER PROTEIN

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Glu Glu Lys Arg Trp Arg Trp Ile Asn Asn Ser Val Phe Asn Gly Asn		
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 Leu Ile Tyr His Arg Glu Glu Lys Arg Trp Arg Trp Ile Asn Asn Ser
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 Val Phe Asn Gly Asn Val Thr Asn Gln Asn Gln Asn Phe Asn Cys Ala
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Ser Thr Leu Ala Ile Val Asn Thr Pro Glu Lys Leu Lys Phe Leu Gln
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Asp Ile Thr Asp Ala Glu Lys Tyr Phe Ile Gly Leu Ile Tyr His Arg
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FOOTER INFORMATION

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Leu Lys Phe Leu Gln Asp Ile Thr Asp Ala Glu Lys Tyr Phe Ile Gly
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Glu Phe Tyr Gln Ala Arg Cys Phe Phe Leu Ser Thr Ser Glu Ser Ser

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Trp Asn Glu Ser Arg Asp Phe Cys Lys Gly Lys Gly Ser Thr Leu Ala

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Ile Val Asn Thr Pro Glu Lys Leu Lys Phe Leu Gln Asp Ile Thr Asp

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Ala Glu Lys Tyr Phe Ile Gly Leu Ile Tyr His Arg Glu Glu Lys Arg

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Trp Arg Trp Ile Asn Asn Ser Val Phe Asn Gly Asn Val Thr Asn Gln

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Asn Gln Asn Phe Asn Cys Ala Thr Ile Gly Leu Thr Lys Thr Phe Asp

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Lys

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Asp Ile Thr Asp Ala Glu Lys Tyr Phe Ile Gly Leu Ile Tyr His Arg
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Glu Glu Lys Arg Trp Arg Trp Ile Asn Asn Ser Val Phe Asn Gly Asn
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Val Thr Asn Gln Asn Gln Asn Phe Asn Cys Ala Thr Ile Gly Leu Thr
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Glu Glu Lys Arg Trp Arg Trp Ile Asn Asn Ser Val Phe Asn Gly Lys
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gttgtccctt gagaacttca cctgctccta tgtgggtacc tgagtcaaaa ttgtcatttt 1680
tgttctgtga aaaataaatt tccttcttgc accatttctg ttttagtttta ctaaaatctg 1740
taaatactgt atttttctgt ttattccaaa tttgtatgaaa ctgacaatcc aatttcaaag 1800
tttgtgtcga cgtctgtcta gcttaaatga atgtgttcta tttgcttcat acatttat 1860
taataaatttgc tacattttc taaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1909

<210> 122
<211> 645
<212> DNA
<213> Homo sapiens

<400> 122
ctgtttcttg gtgggttgg aatggggc acagtggctg tcactgtcat gcctcagtgg 60
agagtgtcgg ctttcattga aaacaacatc gtgggttttgc aaaacttctg ggaaggactg 120
tggatgaattt gctgtggca ggctaacatc aggatgcattt gcaaaatcta tgattccctg 180
ctggctctt ctccggaccc acaggcagcc agaggactga tgtgtgcattt ttccgtgatg 240
tccttcttgc ctttcatgtat ggcatttcattt ggcattgaaat gcaccaggc cacggggac 300
aatgagaagg tgaaggctca cattctgcattt acggctggaa tcatcttcat catcacggc 360
atgggtgtgc tcatccctgt gagctgggtt gccaatgcca tcatcagaga tttctataac 420
tcaatagtga atgttgcggc aaaacgttagt ctggaggaaat ctctctactt aggatggacc 480
acggcactgg tgctgattgt tggaggagct ctgttgcattt gcttttttgc ttgcaacgaa 540
aagagcagta gctacagata ctcgataacct tcccatcgca caacccaaaa aagttatcac 600
accggaaaga agtcaccgag cgtctactcc agaagtcattt atgtg 645

<210> 123
<211> 215
<212> PRT
<213> Homo sapiens

<400> 123
Leu Phe Leu Gly Gly Val Gly Met Val Gly Thr Val Ala Val Thr Val
1 5 10 15

Met	Pro	Gln	Trp	Arg	Val	Ser	Ala	Phe	Ile	Glu	Asn	Asn	Ile	Val	Val
					20				25				30		
Phe	Glu	Asn	Phe	Trp	Glu	Gly	Leu	Trp	Met	Asn	Cys	Val	Arg	Gln	Ala
					35				40			45			
Asn	Ile	Arg	Met	Gln	Cys	Lys	Ile	Tyr	Asp	Ser	Leu	Leu	Ala	Leu	Ser
					50				55			60			
Pro	Asp	Leu	Gln	Ala	Ala	Arg	Gly	Leu	Met	Cys	Ala	Ala	Ser	Val	Met
					65				70			75			80
Ser	Phe	Leu	Ala	Phe	Met	Met	Ala	Ile	Leu	Gly	Met	Lys	Cys	Thr	Arg
					85				90			95			
Cys	Thr	Gly	Asp	Asn	Glu	Lys	Val	Lys	Ala	His	Ile	Leu	Leu	Thr	Ala
					100				105			110			
Gly	Ile	Ile	Phe	Ile	Ile	Thr	Gly	Met	Val	Val	Leu	Ile	Pro	Val	Ser
					115				120			125			
Trp	Val	Ala	Asn	Ala	Ile	Ile	Arg	Asp	Phe	Tyr	Asn	Ser	Ile	Val	Asn
					130				135			140			
Val	Ala	Gln	Lys	Arg	Glu	Leu	Gly	Glu	Ala	Leu	Tyr	Leu	Gly	Trp	Thr
					145				150			155			160
Thr	Ala	Leu	Val	Leu	Ile	Val	Gly	Gly	Ala	Leu	Phe	Cys	Cys	Val	Phe
					165				170			175			
Cys	Cys	Asn	Glu	Lys	Ser	Ser	Ser	Tyr	Arg	Tyr	Ser	Ile	Pro	Ser	His
					180				185			190			
Arg	Thr	Thr	Gln	Lys	Ser	Tyr	His	Thr	Gly	Lys	Ser	Pro	Ser	Val	
					195				200			205			
Tyr	Ser	Arg	Ser	Gln	Tyr	Val									
					210				215						

<210> 124

<211> 24

<212> PRT

<213> Homo sapiens

<400> 124

Leu	Phe	Leu	Gly	Gly	Val	Gly	Met	Val	Gly	Thr	Val	Ala	Val	Thr	Val
1					5				10			15			

Met Pro Gln Trp Arg Val Ser Ala
20

<210> 125
<211> 47
<212> PRT
<213> Homo sapiens

<400> 125
Phe Ile Glu Asn Asn Ile Val Val Phe Glu Asn Phe Trp Glu Gly Leu
1 5 10 15

Trp Met Asn Cys Val Arg Gln Ala Asn Ile Arg Met Gln Cys Lys Ile
20 25 30

Tyr Asp Ser Leu Leu Ala Leu Ser Pro Asp Leu Gln Ala Ala Arg
35 40 45

<210> 126
<211> 21
<212> PRT
<213> Homo sapiens

<400> 126
Gly Leu Met Cys Ala Ala Ser Val Met Ser Phe Leu Ala Phe Met Met
1 5 10 15
Ala Ile Leu Gly Met
20

<210> 127
<211> 15
<212> PRT
<213> Homo sapiens

<400> 127
Lys Cys Thr Arg Cys Thr Gly Asp Asn Glu Lys Val Lys Ala His
1 5 10 15

<210> 128
<211> 24
<212> PRT
<213> Homo sapiens

<400> 128
Ile Leu Leu Thr Ala Gly Ile Ile Phe Ile Ile Thr Gly Met Val Val
1 5 10 15

Leu Ile Pro Val Ser Trp Val Ala
20

<210> 129
<211> 22
<212> PRT
<213> Homo sapiens

<400> 129
Asn Ala Ile Ile Arg Asp Phe Tyr Asn Ser Ile Val Asn Val Ala Gln
1 5 10 15

Lys Arg Glu Leu Gly Glu
20

<210> 130
<211> 25
<212> PRT
<213> Homo sapiens

<400> 130
Ala Leu Tyr Leu Gly Trp Thr Thr Ala Leu Val Leu Ile Val Gly Gly
1 5 10 15

Ala Leu Phe Cys Cys Val Phe Cys Cys
20 25

<210> 131
<211> 37
<212> PRT
<213> Homo sapiens

<400> 131
Asn Glu Lys Ser Ser Ser Tyr Arg Tyr Ser Ile Pro Ser His Arg Thr
1 5 10 15

Thr Gln Lys Ser Tyr His Thr Gly Lys Lys Ser Pro Ser Val Tyr Ser
20 25 30

Arg Ser Gln Tyr Val

<210> 132

<211> 225

<212> PRT

<213> Mus sp.

<400> 132

Met	Ala	Thr	Tyr	Ala	Leu	Gln	Met	Ala	Ala	Leu	Val	Leu	Gly	Gly	Val
1															15

Gly	Met	Val	Gly	Thr	Val	Ala	Val	Thr	Ile	Met	Pro	Gln	Trp	Arg	Val
															30
20															25

Ser	Ala	Phe	Ile	Glu	Ser	Asn	Ile	Val	Val	Phe	Glu	Asn	Arg	Trp	Glu
															45
35															40

Gly	Leu	Trp	Met	Asn	Cys	Met	Arg	His	Ala	Asn	Ile	Arg	Met	Gln	Cys
															60
50															55

Lys	Val	Tyr	Asp	Ser	Leu	Leu	Ala	Leu	Ser	Pro	Asp	Leu	Gln	Ala	Ser
															80
65															70

Arg	Gly	Leu	Met	Cys	Ala	Ala	Ser	Val	Leu	Ala	Phe	Leu	Ala	Phe	Met
															95
															85

Thr	Ala	Ile	Leu	Gly	Met	Lys	Cys	Thr	Arg	Cys	Thr	Gly	Asp	Asp	Glu
															110
															100

Asn	Val	Lys	Ser	Arg	Ile	Leu	Leu	Thr	Ala	Gly	Ile	Ile	Phe	Phe	Ile
															125
															115

Thr	Gly	Leu	Val	Val	Leu	Ile	Pro	Val	Ser	Trp	Val	Ala	Asn	Ser	Ile
															140
															130

Ile	Arg	Asp	Phe	Tyr	Asn	Pro	Leu	Val	Asp	Val	Ala	Leu	Lys	Arg	Glu
															160
															145

Leu	Gly	Glu	Ala	Leu	Tyr	Ile	Gly	Trp	Thr	Thr	Ala	Leu	Val	Leu	Ile
															175
															165

Ala	Gly	Gly	Ala	Leu	Phe	Cys	Cys	Val	Phe	Cys	Cys	Thr	Glu	Arg	Ser
															190
															180

Asn	Ser	Tyr	Arg	Tyr	Ser	Val	Pro	Ser	His	Arg	Thr	Thr	Gln	Arg	Ser
															205
															195

Phe His Ala Glu Lys Arg Ser Pro Ser Ile Tyr Ser Lys Ser Gln Tyr
210 215 220

Val
225

<210> 133
<211> 678
<212> PRT
<213> Mus sp.

<400> 133
Ala Thr Gly Gly Cys Ala Ala Cys Cys Thr Ala Cys Gly Cys Thr Cys
1 5 10 15

Thr Thr Cys Ala Ala Ala Thr Gly Gly Cys Thr Gly Cys Ala Cys Thr
20 25 30

Gly Gly Thr Gly Cys Thr Thr Gly Gly Thr Gly Gly Thr Gly Thr Thr
35 40 45

Gly Gly Cys Ala Thr Gly Gly Thr Gly Gly Cys Ala Cys Gly Gly
50 55 60

Thr Gly Gly Cys Thr Gly Thr Gly Ala Cys Thr Ala Thr Cys Ala Thr
65 70 75 80

Gly Cys Cys Thr Cys Ala Gly Thr Gly Gly Ala Gly Ala Gly Thr Gly
85 90 95

Thr Cys Thr Gly Cys Cys Thr Thr Cys Ala Thr Cys Gly Ala Ala Ala
100 105 110

Gly Thr Ala Ala Cys Ala Thr Thr Gly Thr Gly Gly Thr Gly Thr Thr
115 120 125

Thr Gly Ala Gly Ala Ala Cys Cys Gly Cys Thr Gly Gly Ala Ala
130 135 140

Gly Gly Cys Thr Thr Gly Thr Gly Gly Ala Thr Gly Ala Ala Thr Thr
145 150 155 160

Gly Thr Ala Thr Gly Ala Gly Gly Cys Ala Thr Gly Cys Cys Ala Ala
165 170 175

Cys Ala Thr Cys Ala Gly Ala Ala Thr Gly Cys Ala Gly Thr Gly Cys
180 185 190

PROTEIN SEQUENCE

Ala Ala Gly Gly Thr Cys Thr Ala Cys Gly Ala Cys Thr Cys Cys Cys
195 200 205

Thr Gly Cys Thr Gly Gly Cys Thr Cys Thr Thr Ala Gly Thr Cys Cys
210 215 220

Ala Gly Ala Cys Cys Thr Cys Cys Ala Gly Gly Cys Ala Thr Cys Cys
225 230 235 240

Cys Gly Ala Gly Gly Ala Cys Thr Gly Ala Thr Gly Thr Gly Thr Gly
245 250 255

Cys Thr Gly Cys Gly Thr Cys Cys Gly Thr Cys Thr Thr Gly Gly Cys
260 265 270

Thr Thr Thr Cys Thr Thr Gly Gly Cys Thr Thr Thr Cys Ala Thr Gly
275 280 285

Ala Cys Ala Gly Cys Cys Ala Thr Cys Cys Thr Cys Gly Gly Ala Ala
290 295 300

Thr Gly Ala Ala Gly Thr Gly Cys Ala Cys Cys Ala Gly Ala Thr Gly
305 310 315 320

Cys Ala Cys Gly Gly Gly Gly Ala Cys Gly Ala Thr Gly Ala Gly
325 330 335

Ala Ala Cys Gly Thr Gly Ala Ala Gly Ala Gly Cys Cys Gly Cys Ala
340 345 350

Thr Cys Thr Thr Gly Cys Thr Gly Ala Cys Ala Gly Cys Cys Gly Gly
355 360 365

Ala Ala Thr Cys Ala Thr Cys Thr Thr Cys Thr Thr Cys Ala Thr Cys
370 375 380

Ala Cys Cys Gly Gly Cys Thr Thr Gly Gly Thr Thr Gly Thr Gly Cys
385 390 395 400

Thr Cys Ala Thr Cys Cys Cys Thr Gly Thr Cys Ala Gly Cys Thr Gly
405 410 415

Gly Gly Thr Thr Gly Cys Cys Ala Ala Thr Thr Cys Cys Ala Thr Cys
420 425 430

Ala Thr Cys Ala Gly Ala Gly Ala Cys Thr Thr Cys Thr Ala Cys Ala
435 440 445

100 200 300 400 500 600 700 800

Ala Cys Cys Cys Ala Cys Thr Gly Gly Thr Gly Ala Thr Gly Thr
450 455 460

Gly Gly Cys Cys Cys Thr Ala Ala Ala Gly Cys Gly Cys Gly Ala Gly
465 470 475 480

Cys Thr Gly Gly Gly Ala Gly Ala Ala Gly Cys Cys Cys Thr Cys Thr
485 490 495

Ala Cys Ala Thr Ala Gly Gly Cys Thr Gly Gly Ala Cys Cys Ala Cys
500 505 510

Ala Gly Cys Gly Cys Thr Gly Gly Thr Gly Cys Thr Gly Ala Thr Cys
515 520 525

Gly Cys Thr Gly Gly Ala Gly Gly Ala Cys Ala Cys Thr Gly Thr
530 535 540

Thr Cys Thr Gly Thr Thr Gly Thr Gly Thr Gly Thr Thr Thr Gly
545 550 555 560

Thr Thr Gly Thr Ala Cys Thr Gly Ala Ala Ala Gly Gly Ala Gly Cys
565 570 575

Ala Ala Cys Ala Gly Thr Thr Ala Cys Ala Gly Gly Thr Ala Cys Thr
580 585 590

Cys Gly Gly Thr Ala Cys Cys Ala Thr Cys Cys Cys Ala Thr Cys Gly
595 600 605

Cys Ala Cys Cys Ala Cys Thr Cys Ala Ala Cys Gly Gly Ala Gly Thr
610 615 620

Thr Thr Cys Cys Ala Cys Gly Cys Cys Gly Ala Ala Ala Ala Gly Ala
625 630 635 640

Gly Ala Thr Cys Thr Cys Cys Gly Ala Gly Cys Ala Thr Ala Thr Ala
645 650 655

Cys Thr Cys Cys Ala Ala Ala Ala Gly Thr Cys Ala Gly Thr Ala Thr
660 665 670

Gly Thr Gly Thr Ala Gly
675

<211> 1090

<212> PRT

<213> Homo sapiens

<400> 134

Gly Gly Gly Gly Cys Ala Gly Ala Ala Thr Gly Ala Gly Ala Thr Ala
1 5 10 15

Thr Thr Ala Ala Ala Cys Cys Cys Ala Ala Thr Gly Cys Thr Thr Thr
20 25 30

Gly Ala Thr Thr Gly Thr Thr Cys Thr Ala Gly Ala Ala Ala Gly Thr
35 40 45

Ala Thr Ala Gly Thr Ala Ala Thr Thr Thr Gly Thr Thr Thr Cys
50 55 60

Thr Ala Ala Gly Gly Thr Gly Gly Thr Thr Cys Ala Ala Gly Cys Ala
65 70 75 80

Thr Cys Thr Ala Cys Thr Cys Thr Thr Thr Thr Ala Thr Cys Ala
85 90 95

Thr Thr Thr Ala Cys Thr Thr Cys Ala Ala Ala Ala Thr Gly Ala Cys
100 105 110

Ala Thr Thr Gly Cys Thr Ala Ala Ala Gly Ala Cys Thr Gly Cys Ala
115 120 125

Thr Thr Ala Thr Thr Thr Ala Cys Thr Ala Cys Thr Gly Thr Ala
130 135 140

Ala Thr Thr Thr Cys Thr Cys Cys Ala Cys Gly Ala Cys Ala Thr Ala
145 150 155 160

Gly Cys Ala Thr Thr Ala Thr Gly Thr Ala Cys Ala Thr Ala Gly Ala
165 170 175

Thr Gly Ala Gly Thr Gly Thr Ala Ala Cys Ala Thr Thr Thr Ala Thr
180 185 190

Ala Thr Cys Thr Cys Ala Cys Ala Thr Ala Gly Ala Gly Ala Cys Ala
195 200 205

Thr Gly Cys Thr Thr Ala Thr Ala Thr Gly Gly Thr Thr Thr Ala
210 215 220

Thr Thr Thr Ala Ala Ala Ala Thr Gly Ala Ala Ala Thr Gly Cys Cys

225 230 235 240
Ala Gly Thr Cys Cys Ala Thr Thr Ala Cys Ala Cys Thr Gly Ala Ala
245 250 255
Thr Ala Ala Ala Thr Ala Gly Ala Ala Cys Thr Cys Ala Ala Cys Thr
260 265 270
Ala Thr Thr Gly Cys Thr Thr Thr Cys Ala Gly Gly Gly Ala Ala
275 280 285
Ala Thr Cys Ala Thr Gly Gly Ala Thr Ala Gly Gly Thr Thr Gly
290 295 300
Ala Ala Gly Ala Ala Gly Gly Thr Thr Ala Cys Thr Ala Thr Thr Ala
305 310 315 320
Ala Thr Thr Gly Thr Thr Thr Ala Ala Ala Ala Cys Ala Gly
325 330 335
Cys Thr Thr Ala Gly Gly Ala Thr Thr Ala Ala Thr Gly Thr Cys
340 345 350
Cys Thr Cys Cys Ala Thr Thr Ala Thr Ala Ala Thr Gly Ala Ala
355 360 365
Gly Ala Thr Thr Ala Ala Ala Ala Thr Gly Ala Ala Gly Gly Cys Thr
370 375 380
Thr Thr Ala Ala Thr Cys Ala Gly Cys Ala Thr Thr Gly Thr Ala Ala
385 390 395 400
Ala Gly Gly Ala Ala Ala Thr Thr Gly Ala Ala Thr Gly Gly Cys Thr
405 410 415
Thr Thr Cys Thr Gly Ala Thr Ala Thr Gly Cys Thr Gly Thr Thr Thr
420 425 430
Thr Thr Thr Ala Gly Cys Cys Thr Ala Gly Gly Ala Gly Thr Thr Ala
435 440 445
Gly Ala Ala Ala Thr Cys Cys Thr Ala Ala Cys Thr Thr Cys Thr Thr
450 455 460
Thr Ala Thr Cys Cys Thr Cys Thr Cys Thr Cys Cys Cys Ala Gly
465 470 475 480
Ala Gly Gly Cys Thr Thr Thr Thr Thr Thr Cys Thr Thr

DRAFT VERSION 1.0

485

490

495

Gly Thr Gly Thr Ala Thr Thr Ala Ala Ala Thr Thr Ala Ala Cys Ala
500 505 510

Thr Thr Thr Thr Ala Ala Ala Ala Gly Cys Ala Gly Ala Thr
515 520 525

Ala Thr Thr Thr Gly Thr Cys Ala Ala Gly Gly Gly Cys Thr
530 535 540

Thr Thr Gly Cys Ala Thr Thr Cys Ala Ala Ala Cys Thr Gly Cys Thr
545 550 555 560

Thr Thr Thr Cys Cys Ala Gly Gly Cys Thr Ala Thr Ala Cys Thr
565 570 575

Cys Ala Gly Ala Ala Gly Ala Ala Ala Gly Ala Thr Ala Ala Ala Ala
580 585 590

Gly Thr Gly Thr Gly Ala Thr Cys Thr Ala Ala Gly Ala Ala Ala Ala
595 600 605

Ala Gly Thr Gly Ala Thr Gly Gly Thr Thr Thr Ala Gly Gly Ala
610 615 620

Ala Ala Gly Thr Gly Ala Ala Ala Ala Thr Ala Thr Thr Thr Thr Thr
625 630 635 640

Gly Thr Thr Thr Thr Gly Thr Ala Thr Thr Thr Gly Ala Ala Gly
645 650 655

Ala Ala Gly Ala Ala Thr Gly Ala Thr Gly Cys Ala Thr Thr Thr Thr
660 665 670

Gly Ala Cys Ala Ala Gly Ala Ala Ala Thr Cys Ala Thr Ala Thr Ala
675 680 685

Thr Gly Thr Ala Thr Gly Gly Ala Thr Ala Thr Ala Thr Thr Thr Thr
690 695 700

Ala Ala Thr Ala Ala Gly Thr Ala Thr Thr Thr Gly Ala Gly Thr Ala
705 710 715 720

Cys Ala Gly Ala Cys Thr Thr Thr Gly Ala Gly Gly Thr Thr Thr Cys
725 730 735

Ala Thr Cys Ala Ala Thr Ala Ala Ala Thr Ala Ala Ala Ala

EQUATION

740 745 750
Gly Ala Gly Cys Ala Gly Ala Ala Ala Ala Ala Thr Ala Thr Gly Thr
755 760 765
Cys Thr Thr Gly Gly Thr Thr Thr Cys Ala Thr Thr Thr Gly Cys
770 775 780
Thr Thr Ala Cys Cys Ala Ala Ala Ala Ala Ala Cys Ala Ala Cys
785 790 795 800
Ala Ala Cys Ala Ala Ala Ala Ala Ala Gly Thr Thr Gly Thr Cys
805 810 815
Cys Thr Thr Thr Gly Ala Gly Ala Cys Thr Thr Cys Ala Cys Cys
820 825 830
Thr Gly Cys Thr Cys Cys Thr Ala Thr Gly Thr Gly Gly Thr Ala
835 840 845
Cys Cys Thr Gly Ala Gly Thr Cys Ala Ala Ala Ala Thr Thr Gly Thr
850 855 860
Cys Ala Thr Thr Thr Thr Gly Thr Thr Cys Thr Gly Thr Gly Ala
865 870 875 880
Ala Ala Ala Ala Thr Ala Ala Ala Thr Thr Thr Cys Cys Thr Thr Cys
885 890 895
Thr Thr Gly Thr Ala Cys Cys Ala Thr Thr Thr Cys Thr Gly Thr Thr
900 905 910
Thr Ala Gly Thr Thr Thr Ala Cys Thr Ala Ala Ala Ala Thr Cys
915 920 925
Thr Gly Thr Ala Ala Ala Thr Ala Cys Thr Gly Thr Ala Thr Thr Thr
930 935 940
Thr Thr Cys Thr Gly Thr Thr Ala Thr Thr Cys Cys Ala Ala Ala
945 950 955 960
Thr Thr Thr Gly Ala Thr Gly Ala Ala Ala Cys Thr Gly Ala Cys Ala
965 970 975
Ala Thr Cys Cys Ala Ala Ala Thr Thr Gly Ala Ala Ala Gly Thr Thr
980 985 990
Thr Gly Thr Gly Thr Cys Gly Ala Cys Gly Thr Cys Thr Gly Thr Cys

ପ୍ରକାଶକ ପତ୍ର ମହିନେ

995	1000	1005
Thr Ala Gly Cys Thr Thr Ala Ala Ala Thr Gly Ala Ala Thr Gly Thr		
1010	1015	1020
Gly Thr Thr Cys Thr Ala Thr Thr Gly Cys Thr Thr Thr Ala Thr		
1025	1030	1035
Ala Cys Ala Thr Thr Thr Ala Thr Ala Thr Thr Ala Ala Thr Ala Ala		
1045	1050	1055
Ala Thr Thr Gly Thr Ala Cys Ala Thr Thr Thr Thr Cys Cys Ala		
1060	1065	1070
Ala		
1075	1080	1085
Ala Ala		
1090		
<210> 135		
<211> 209		
<212> PRT		
<213> Homo sapiens		
<400> 135		
Met Ala Ser Met Gly Leu Gln Val Met Gly Ile Ala Leu Ala Val Leu		
1	5	10
		15
Gly Trp Leu Ala Val Met Leu Cys Cys Ala Leu Pro Met Trp Arg Val		
20	25	30
Thr Ala Phe Ile Gly Ser Asn Ile Val Thr Ser Gln Thr Ile Trp Glu		
35	40	45
Gly Leu Trp Met Asn Cys Val Val Gln Ser Thr Gly Gln Met Gln Cys		
50	55	60
Lys Val Tyr Asp Ser Leu Leu Ala Leu Pro Gln Asp Leu Gln Ala Ala		
65	70	75
		80
Arg Ala Leu Val Ile Ile Ser Ile Ile Val Ala Ala Leu Gly Val Leu		
85	90	95
Leu Ser Val Val Gly Gly Lys Cys Thr Asn Cys Leu Glu Asp Glu Ser		
100	105	110

POLETTI

Ala Lys Ala Lys Thr Met Ile Val Ala Gly Val Val Phe Leu Leu Ala			
115	120	125	
Gly Leu Met Val Ile Val Pro Val Ser Trp Thr Ala His Asn Ile Ile			
130	135	140	
Gln Asp Phe Tyr Asn Pro Leu Val Ala Ser Gly Gln Lys Arg Glu Met			
145	150	155	160
Gly Ala Ser Leu Tyr Val Gly Trp Ala Ala Ser Gly Leu Leu Leu Leu			
165	170	175	
Gly Gly Gly Leu Leu Cys Cys Asn Cys Pro Pro Arg Thr Asp Lys Pro			
180	185	190	
Tyr Ser Ala Lys Tyr Ser Ala Ala Arg Ser Ala Ala Ser Asn Tyr			
195	200	205	
Val			
<210> 136			
<211> 210			
<212> PRT			
<213> Mus sp.			
<400> 136			
Met Ala Ser Met Gly Leu Gln Val Leu Gly Ile Ser Leu Ala Val Leu			
1	5	10	15
Gly Trp Leu Gly Ile Ile Leu Ser Cys Ala Leu Pro Met Trp Arg Val			
20	25	30	
Thr Ala Phe Ile Gly Ser Asn Ile Val Thr Ala Gln Thr Ser Trp Glu			
35	40	45	
Gly Leu Trp Met Asn Cys Val Val Gln Ser Thr Gly Gln Met Gln Cys			
50	55	60	
Lys Met Tyr Asp Ser Met Leu Ala Leu Pro Gln Asp Leu Gln Ala Ala			
65	70	75	80
Arg Ala Leu Met Val Ile Ser Ile Ile Val Gly Ala Leu Gly Met Leu			
85	90	95	
Leu Ser Val Val Gly Gly Lys Cys Thr Asn Cys Met Glu Asp Glu Thr			
100	105	110	

Val Lys Ala Lys Ile Met Ile Thr Ala Gly Ala Val Phe Ile Val Ala
115 120 125

Ser Met Leu Ile Met Val Pro Val Ser Trp Thr Ala His Asn Val Ile
130 135 140

Arg Asp Phe Tyr Asn Pro Met Val Ala Ser Gly Gln Lys Arg Glu Met
145 150 155 160

Gly Ala Ser Leu Tyr Val Gly Trp Ala Ala Ser Gly Leu Leu Leu
165 170 175

Gly Gly Gly Leu Leu Cys Cys Ser Cys Pro Pro Arg Ser Asn Asp Lys
180 185 190

Pro Tyr Ser Ala Lys Tyr Ser Ala Ala Arg Ser Val Pro Ala Ser Asn
195 200 205

Tyr Val
210

<210> 137
<211> 248
<212> PRT
<213> Rattus sp.

<400> 137
Met Ser Met Ser Leu Glu Ile Thr Gly Thr Ser Leu Ala Val Leu Gly
1 5 10 15

Trp Leu Cys Thr Ile Val Cys Cys Ala Leu Pro Met Trp Arg Val Ser
20 25 30

Ala Phe Ile Gly Ser Ser Ile Ile Thr Ala Gln Ile Thr Trp Glu Gly
35 40 45

Leu Trp Met Asn Cys Val Gln Ser Thr Gly Gln Met Gln Cys Lys Met
50 55 60

Tyr Asp Ser Leu Leu Ala Leu Pro Gln Asp Leu Gln Ala Ala Arg Ala
65 70 75 80

Leu Ile Val Val Ser Ile Leu Leu Ala Ala Phe Gly Leu Leu Val Ala
85 90 95

Leu Val Gly Ala Gln Cys Thr Asn Cys Val Gln Asp Glu Thr Ala Lys

DRAFT

100

105

110

Ala Lys Ile Thr Ile Val Ala Gly Val Leu Phe Leu Leu Ala Ala Val
115 120 125

Leu Thr Leu Val Pro Val Ser Trp Ser Ala Asn Thr Ile Ile Arg Asp
130 135 140

Phe Tyr Asn Pro Leu Val Pro Glu Ala Gln Lys Arg Glu Met Gly Thr
145 150 155 160

Gly Leu Tyr Val Gly Trp Ala Ala Ala Leu Gln Leu Leu Gly Gly
165 170 175

Ala Leu Leu Cys Cys Ser Cys Pro Pro Arg Glu Lys Tyr Ala Pro Thr
180 185 190

Lys Ile Leu Tyr Ser Ala Pro Arg Ser Thr Gly Pro Gly Thr Gly Thr
195 200 205

Gly Thr Ala Tyr Asp Arg Lys Thr Thr Ser Glu Arg Pro Gly Ala Arg
210 215 220

Thr Pro His His His Tyr Gln Pro Ser Met Tyr Pro Thr Arg Pro
225 230 235 240

Ala Cys Ser Leu Ala Ser Glu Thr
245

<210> 138

<211> 191

<212> PRT

<213> Homo sapiens

<400> 138

Phe Ile Glu Asn Asn Ile Val Val Phe Glu Asn Phe Trp Glu Gly Leu
1 5 10 15

Trp Met Asn Cys Val Arg Gln Ala Asn Ile Arg Met Gln Cys Lys Ile
20 25 30

Tyr Asp Ser Leu Leu Ala Leu Ser Pro Asp Leu Gln Ala Ala Arg Gly
35 40 45

Leu Met Cys Ala Ala Ser Val Met Ser Phe Leu Ala Phe Met Met Ala
50 55 60

Ile Leu Gly Met Lys Cys Thr Arg Cys Thr Gly Asp Asn Glu Lys Val
65 70 75 80

Lys Ala His Ile Leu Leu Thr Ala Gly Ile Ile Phe Ile Ile Thr Gly
85 90 95

Met Val Val Leu Ile Pro Val Ser Trp Val Ala Asn Ala Ile Ile Arg
100 105 110

Asp Phe Tyr Asn Ser Ile Val Asn Val Ala Gln Lys Arg Glu Leu Gly
115 120 125

Glu Ala Leu Tyr Leu Gly Trp Thr Thr Ala Leu Val Leu Ile Val Gly
130 135 140

Gly Ala Leu Phe Cys Cys Val Phe Cys Cys Asn Glu Lys Ser Ser Ser
145 150 155 160

Tyr Arg Tyr Ser Ile Pro Ser His Arg Thr Thr Gln Lys Ser Tyr His
165 170 175

Thr Gly Lys Lys Ser Pro Ser Val Tyr Ser Arg Ser Gln Tyr Val
180 185 190

<210> 139

<400> 139

000

<210> 140

<400> 140

000

<210> 141

<211> 323

<212> DNA

<213> Homo sapiens

<400> 141

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tgagttgagc ttgaggccgc aggatgaggg tcatcatgg gatagccagc ctggggttcc 120
tctggcagt attcctgctt cctcttgtt ttggggtccc cacagaggag actaccttg 180
gagaatctgt ggcctccat ctccccaaag gctgtcgacg atgctgtgac cccgaggacc 240
tgatgtcctc tgatgatacg gtccaggccc ctgtttcccc ttatgtcctg cctgaagtca 300
ggccgtacct cggccgcgac cac 323

<210> 142
<211> 240
<212> DNA
<213> Homo sapiens

<400> 142
atgagggtca tcatggggat agccagcctg gggttcctct gggcagtatt cctgcttcct 60
cttgtgtttg gggccccac agaggagact accttggag aatctgtggc ctcccatctc 120
cccaaaggct gtcgacgatg ctgtgacccc gaggacctga tgtcctctga tgatacggc 180
caggccctcg tttccctta tgtcctgcct gaagtcaggc cgtacctcgg ccgcgaccac 240

<210> 143
<211> 80
<212> PRT
<213> Homo sapiens

<400> 143
Met Arg Val Ile Met Gly Ile Ala Ser Leu Gly Phe Leu Trp Ala Val
1 5 10 15

Phe Leu Leu Pro Leu Val Phe Gly Val Pro Thr Glu Glu Thr Thr Phe
20 25 30

Gly Glu Ser Val Ala Ser His Leu Pro Lys Gly Cys Arg Arg Cys Cys
35 40 45

Asp Pro Glu Asp Leu Met Ser Ser Asp Asp Thr Val Gln Ala Pro Val
50 55 60

Ser Pro Tyr Val Leu Pro Glu Val Arg Pro Tyr Leu Gly Arg Asp His
65 70 75 80

<210> 144
<211> 24
<212> PRT
<213> Homo sapiens

<400> 144
Met Arg Val Ile Met Gly Ile Ala Ser Leu Gly Phe Leu Trp Ala Val
1 5 10 15

Phe Leu Leu Pro Leu Val Phe Gly

<210> 145

<211> 56

<212> PRT

<213> Homo sapiens

<400> 145

Val Pro Thr Glu Glu Thr Thr Phe Gly Glu Ser Val Ala Ser His Leu

1

5

10

15

Pro Lys Gly Cys Arg Arg Cys Cys Asp Pro Glu Asp Leu Met Ser Ser

20

25

30

Asp Asp Thr Val Gln Ala Pro Val Ser Pro Tyr Val Leu Pro Glu Val

35

40

45

Arg Pro Tyr Leu Gly Arg Asp His

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<210> 146

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<210> 151

<211> 546
<212> DNA
<213> *Homo sapiens*

<210> 152
<211> 345
<212> DNA
<213> *Homo sapiens*

<210> 153
<211> 115
<212> PRT
<213> *Homo sapiens*

<400> 153
Met Glu Phe Leu Tyr Arg Ile Val Val Gly Phe Ile Leu Ile Phe Thr
1 5 10 15

Phe Phe Asn Ile Lys Gly Gln Asn Thr Lys Cys Pro Met Ser Cys Tyr
 20 25 30

Tyr Ile Val Arg Val Leu Gly Thr Leu Gly Ile Leu Thr Val Phe Trp
35 40 45

Val Cys Pro Leu Thr Ile Phe Asn Pro Asp Tyr Phe Ile Pro Ile Ser
50 55 60

Ile Thr Ile Val Leu Thr Leu Leu Leu Gly Ile Leu Phe Leu Ile Val
65 70 75 80

Tyr Tyr Gly Ser Phe His Pro Asn Arg Ser Ala Glu Thr Lys Cys Asp
85 90 95

Glu Ile Asp Gly Lys Pro Val Leu Arg Glu Cys Arg Met Arg Tyr Phe
100 105 110

Leu Met Glu
115

<210> 154

<211> 22

<212> PRT

<213> Homo sapiens

<400> 154

Met Glu Phe Leu Tyr Arg Ile Val Val Gly Phe Ile Leu Ile Phe Thr
1 5 10 15

Phe Phe Asn Ile Lys Gly
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<210> 155

<211> 93

<212> PRT

<213> Homo sapiens

<400> 155

Gln Asn Thr Lys Cys Pro Met Ser Cys Tyr Tyr Ile Val Arg Val Leu
1 5 10 15

Gly Thr Leu Gly Ile Leu Thr Val Phe Trp Val Cys Pro Leu Thr Ile
20 25 30

Phe Asn Pro Asp Tyr Phe Ile Pro Ile Ser Ile Thr Ile Val Leu Thr
35 40 45

Leu Leu Leu Gly Ile Leu Phe Leu Ile Val Tyr Tyr Gly Ser Phe His
50 55 60

Pro Asn Arg Ser Ala Glu Thr Lys Cys Asp Glu Ile Asp Gly Lys Pro
65 70 75 80

PROTEIN SEQUENCES

Val Leu Arg Glu Cys Arg Met Arg Tyr Phe Leu Met Glu
85 90

<210> 156

<211> 9

<212> PRT

<213> Homo sapiens

<400> 156

Gln Asn Thr Lys Cys Pro Met Ser Cys
1 5

<210> 157

<211> 18

<212> PRT

<213> Homo sapiens

<400> 157

Tyr Tyr Ile Val Arg Val Leu Gly Thr Leu Gly Ile Leu Thr Val Phe
1 5 10 15

Trp Val

<210> 158

<211> 9

<212> PRT

<213> Homo sapiens

<400> 158

Cys Pro Leu Thr Ile Phe Asn Pro Asp
1 5

<210> 159

<211> 24

<212> PRT

<213> Homo sapiens

<400> 159

Tyr Phe Ile Pro Ile Ser Ile Thr Ile Val Leu Thr Leu Leu Gly
1 5 10 15

Ile Leu Phe Leu Ile Val Tyr Tyr

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<210> 160
<211> 33
<212> PRT
<213> Homo sapiens

<400> 160
Gly Ser Phe His Pro Asn Arg Ser Ala Glu Thr Lys Cys Asp Glu Ile
1 5 10 15

Asp Gly Lys Pro Val Leu Arg Glu Cys Arg Met Arg Tyr Phe Leu Met
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<210> 171
<211> 1684
<212> DNA
<213> Homo sapiens

<400> 171

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atgaagaaaa tatgcaactg gtcaggcat atctcaacca gttctactct cttgaaatag 180
aaggaaatca tcttgtcaa agcaagaata ggagtctcat agatgacaaa attcgggaaa 240
tgcaagcatt ttttggttgc acagtgactg gaaaactgga ctcaaaccacc cttgagatca 300
tgaagacacc caggtgtggg gtgcctgatg tggccagta tggctacacc ctccctgggt 360
ggagaaaata caacccacc tacagaataa taaactatac tccggatatg gcacgagctg 420
ctgtggatga ggctatccaa gaagggttag aagtgtggag caaagtcaact ccactaaaat 480
tcaccaagat ttcaaagggg attgcagaca tcatgattgc cttaggact cgagtccatg 540
gtcgggttcc tcgctatttt gatggccct tggagtgct tggccatgcc tttccctctg 600
gtccgggtct ggggtgtgac actcattttg atgaggatga aaactggacc aaggatggag 660
caggattcaa ctgtttctt gtggctgctc atgaatttgg tcatgcactg gggctctc 720
actccaatga tcaaacagcc ttgtatgttcc caaattatgt ctccctggat cccagaaaaat 780
acccactttc tcaggatgat atcaatggaa tccagtcctat ctatggaggt ctgcctaagg 840
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acgctatcac aacttccgc agagaagtaa tgttctttaa aggccaggac ctatggagga 960
tctattatga tatcacggat gttgagtttgc aattaattgc ttcattctgg ccattctctgc 1020
cagctgatct gcaagctgca tacgagaacc ccagagataa gattctgggt tttaaagatg 1080
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cattaggttt tccaggacgt gtgaagaaaa tagatgcagc cgtctgtgat aagaccacaa 1200
aaaaaaccta cttcttgc ggcatttggt gctggaggtt tggatgaaatg acccaaacca 1260
tggacaaagg attcccgac agagtggtaa aacactttcc tggaaatcagt atccgttttg 1320

DNA 序列 5'→3'

atgctgctt ccagcacaaa ggattcttct ttttcagccg tggatcaaag caatttgaat 1380
acaacattaa gacaaagaat attaccgaa tcatacgaaac taatacttg ttcaatgca 1440
aagaacccaaa gaactcctca tttggttttg atatcaacaa ggaaaaagca cattcaggag 1500
gcataaaagat attgtatcat aagagttaa gcttggttat ttgggtatt gttcatttgc 1560
tgaaaaacac ttcttattt caataaattc atagacctaa aataaacctc aacaggtctt 1620
ttaatataaa ttctgcttca aaatagaata aaaccattct ttaacaacaa aaaaaaaaaa 1680
aaaaa 1684

<210> 172
<211> 1542
<212> DNA
<213> Homo sapiens

<400> 172
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tactctcttg aaatagaagg gaatcatctt gttcaaagca agaataggag tctcatagat 180
gacaaaattc gggaaatgca agcattttt ggattgacag tgactggaaa actggactca 240
aacacccttg agatcatgaa gacacccagg tgggggtgc ctgatgtggg ccagtatggc 300
tacaccctcc ctgggtggag aaaatacaac ctcacccata gaataataaa ctatactccg 360
gatatggcac gagctgctgt ggatgaggct atccaagaag gtttagaagt gtggagcaaa 420
gtcactccac taaaattcac caagattca aaggggattt cagacatcat gattgcctt 480
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catgccttc ctccctggcc gggctctgggt ggtgacactc attttgcata ggtgaaaac 600
tggaccaagg atggagcagg attcaacttgc tttttgtgg ctgctcatga atttggcat 660
gcactggggc tctctcactc caatgatcaa acacccctga tgttcccaa ttatgtctcc 720
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cctgacttgc cttttgacgc tatacacaact ttccgcagag aagtaatgtt cttaaaggc 900
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ctggttttta aagatgaaaa cttctggatg atcagaggat atgctgtctt gccagattat 1080
cccaaatccca tccatatacatt aggtttccca ggacgtgtga agaaaataga tgcagccgtc 1140
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tcaaagcaat ttgaatacaa cattaagaca aagaatatta cccgaatcat gagaactaat 1380
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aaagcacatt caggaggcat aaagatatttgc tatacataaga gtttaaggtt gtttattttt 1500
ggtattgttc atttgcataaa aacacttctt atttatcaat aa 1542

<210> 173
<211> 513
<212> PRT
<213> Homo sapiens

<400> 173

Met Lys Arg Leu Leu Leu Phe Leu Phe Phe Ile Thr Phe Ser Ser
1 5 10 15

Ala Phe Pro Leu Val Arg Met Thr Glu Asn Glu Glu Asn Met Gln Leu
20 25 30

Ala Gln Ala Tyr Leu Asn Gln Phe Tyr Ser Leu Glu Ile Glu Gly Asn
35 40 45

His Leu Val Gln Ser Lys Asn Arg Ser Leu Ile Asp Asp Lys Ile Arg
50 55 60

Glu Met Gln Ala Phe Phe Gly Leu Thr Val Thr Gly Lys Leu Asp Ser
65 70 75 80

Asn Thr Leu Glu Ile Met Lys Thr Pro Arg Cys Gly Val Pro Asp Val
85 90 95

Gly Gln Tyr Gly Tyr Thr Leu Pro Gly Trp Arg Lys Tyr Asn Leu Thr
100 105 110

Tyr Arg Ile Ile Asn Tyr Thr Pro Asp Met Ala Arg Ala Ala Val Asp
115 120 125

Glu Ala Ile Gln Glu Gly Leu Glu Val Trp Ser Lys Val Thr Pro Leu
130 135 140

Lys Phe Thr Lys Ile Ser Lys Gly Ile Ala Asp Ile Met Ile Ala Phe
145 150 155 160

Arg Thr Arg Val His Gly Arg Cys Pro Arg Tyr Phe Asp Gly Pro Leu
165 170 175

Gly Val Leu Gly His Ala Phe Pro Pro Gly Pro Gly Leu Gly Gly Asp
180 185 190

Thr His Phe Asp Glu Asp Glu Asn Trp Thr Lys Asp Gly Ala Gly Phe
195 200 205

Asn Leu Phe Leu Val Ala Ala His Glu Phe Gly His Ala Leu Gly Leu
210 215 220

Ser His Ser Asn Asp Gln Thr Ala Leu Met Phe Pro Asn Tyr Val Ser
225 230 235 240

Leu Asp Pro Arg Lys Tyr Pro Leu Ser Gln Asp Asp Ile Asn Gly Ile
245 250 255

EQUINE GENE INDEX

Gln Ser Ile Tyr Gly Gly Leu Pro Lys Val Pro Ala Lys Pro Lys Glu
260 265 270

Pro Thr Ile Pro His Ala Cys Asp Pro Asp Leu Thr Phe Asp Ala Ile
275 280 285

Thr Thr Phe Arg Arg Glu Val Met Phe Phe Lys Gly Arg His Leu Trp
290 295 300

Arg Ile Tyr Tyr Asp Ile Thr Asp Val Glu Phe Glu Leu Ile Ala Ser
305 310 315 320

Phe Trp Pro Ser Leu Pro Ala Asp Leu Gln Ala Ala Tyr Glu Asn Pro
325 330 335

Arg Asp Lys Ile Leu Val Phe Lys Asp Glu Asn Phe Trp Met Ile Arg
340 345 350

Gly Tyr Ala Val Leu Pro Asp Tyr Pro Lys Ser Ile His Thr Leu Gly
355 360 365

Phe Pro Gly Arg Val Lys Lys Ile Asp Ala Ala Val Cys Asp Lys Thr
370 375 380

Thr Arg Lys Thr Tyr Phe Phe Val Gly Ile Trp Cys Trp Arg Phe Asp
385 390 395 400

Glu Met Thr Gln Thr Met Asp Lys Gly Phe Pro Gln Arg Val Val Lys
405 410 415

His Phe Pro Gly Ile Ser Ile Arg Val Asp Ala Ala Phe Gln Tyr Lys
420 425 430

Gly Phe Phe Phe Ser Arg Gly Ser Lys Gln Phe Glu Tyr Asn Ile
435 440 445

Lys Thr Lys Asn Ile Thr Arg Ile Met Arg Thr Asn Thr Trp Phe Gln
450 455 460

Cys Lys Glu Pro Lys Asn Ser Ser Phe Gly Phe Asp Ile Asn Lys Glu
465 470 475 480

Lys Ala His Ser Gly Gly Ile Lys Ile Leu Tyr His Lys Ser Leu Ser
485 490 495

Leu Phe Ile Phe Gly Ile Val His Leu Leu Lys Asn Thr Ser Ile Tyr
500 505 510

Gln

<210> 174

<211> 17

<212> PRT

<213> Homo sapiens

<400> 174

Met Lys Arg Leu Leu Leu Phe Leu Phe Phe Ile Thr Phe Ser Ser
1 5 10 15

Ala

<210> 175

<211> 291

<212> PRT

<213> Homo sapiens

<400> 175

Phe Pro Leu Val Arg Met Thr Glu Asn Glu Glu Asn Met Gln Leu Ala
1 5 10 15

Gln Ala Tyr Leu Asn Gln Phe Tyr Ser Leu Glu Ile Glu Gly Asn His
20 25 30

Leu Val Gln Ser Lys Asn Arg Ser Leu Ile Asp Asp Lys Ile Arg Glu
35 40 45

Met Gln Ala Phe Phe Gly Leu Thr Val Thr Gly Lys Leu Asp Ser Asn
50 55 60

Thr Leu Glu Ile Met Lys Thr Pro Arg Cys Gly Val Pro Asp Val Gly
65 70 75 80

Gln Tyr Gly Tyr Thr Leu Pro Gly Trp Arg Lys Tyr Asn Leu Thr Tyr
85 90 95

Arg Ile Ile Asn Tyr Thr Pro Asp Met Ala Arg Ala Ala Val Asp Glu
100 105 110

Ala Ile Gln Glu Gly Leu Glu Val Trp Ser Lys Val Thr Pro Leu Lys
115 120 125

PDB ID: 1B2D

Phe Thr Lys Ile Ser Lys Gly Ile Ala Asp Ile Met Ile Ala Phe Arg
130 135 140

Thr Arg Val His Gly Arg Cys Pro Arg Tyr Phe Asp Gly Pro Leu Gly
145 150 155 160

Val Leu Gly His Ala Phe Pro Pro Gly Pro Gly Leu Gly Gly Asp Thr
165 170 175

His Phe Asp Glu Asp Glu Asn Trp Thr Lys Asp Gly Ala Gly Phe Asn
180 185 190

Leu Phe Leu Val Ala Ala His Glu Phe Gly His Ala Leu Gly Leu Ser
195 200 205

His Ser Asn Asp Gln Thr Ala Leu Met Phe Pro Asn Tyr Val Ser Leu
210 215 220

Asp Pro Arg Lys Tyr Pro Leu Ser Gln Asp Asp Ile Asn Gly Ile Gln
225 230 235 240

Ser Ile Tyr Gly Gly Leu Pro Lys Val Pro Ala Lys Pro Lys Glu Pro
245 250 255

Thr Ile Pro His Ala Cys Asp Pro Asp Leu Thr Phe Asp Ala Ile Thr
260 265 270

Thr Phe Arg Arg Glu Val Met Phe Phe Lys Gly Arg His Leu Trp Arg
275 280 285

Ile Tyr Tyr
290

<210> 176
<211> 467
<212> PRT
<213> Homo sapiens

<400> 176
Met Phe Ser Leu Lys Thr Leu Pro Phe Leu Leu Leu His Val Gln
1 5 10 15

Ile Ser Lys Ala Phe Pro Val Ser Ser Lys Glu Lys Asn Thr Lys Thr
20 25 30

Val Gln Asp Tyr Leu Glu Lys Phe Tyr Gln Leu Pro Ser Asn Gln Tyr
35 40 45

Gln Ser Thr Arg Lys Asn Gly Thr Asn Val Ile Val Glu Lys Leu Lys
50 55 60

Glu Met Gln Arg Phe Phe Gly Leu Asn Val Thr Gly Lys Pro Asn Glu
65 70 75 80

Glu Thr Leu Asp Met Met Lys Lys Pro Arg Cys Gly Val Pro Asp Ser
85 90 95

Gly Gly Phe Met Leu Thr Pro Gly Asn Pro Lys Trp Glu Arg Thr Asn
100 105 110

Leu Thr Tyr Arg Ile Arg Asn Tyr Thr Pro Gln Leu Ser Glu Ala Glu
115 120 125

Val Glu Arg Ala Ile Lys Asp Ala Phe Glu Leu Trp Ser Val Ala Ser
130 135 140

Pro Leu Ile Phe Thr Arg Ile Ser Gln Gly Glu Ala Asp Ile Asn Ile
145 150 155 160

Ala Phe Tyr Gln Arg Asp His Gly Asp Asn Ser Pro Phe Asp Gly Pro
165 170 175

Asn Gly Ile Leu Ala His Ala Phe Gln Pro Gly Gln Gly Ile Gly Gly
180 185 190

Asp Ala His Phe Asp Ala Glu Glu Thr Trp Thr Asn Thr Ser Ala Asn
195 200 205

Tyr Asn Leu Phe Leu Val Ala Ala His Glu Phe Gly His Ser Leu Gly
210 215 220

Leu Ala His Ser Ser Asp Pro Gly Ala Leu Met Tyr Pro Asn Tyr Ala
225 230 235 240

Phe Arg Glu Thr Ser Asn Tyr Ser Leu Pro Gln Asp Asp Ile Asp Gly
245 250 255

Ile Gln Ala Ile Tyr Gly Leu Ser Ser Asn Pro Ile Gln Pro Thr Gly
260 265 270

Pro Ser Thr Pro Lys Pro Cys Asp Pro Ser Leu Thr Phe Asp Ala Ile
275 280 285

Thr Thr Leu Arg Gly Glu Ile Leu Phe Phe Lys Asp Arg Tyr Phe Trp
290 295 300

BLOOMSBURG UNIVERSITY LIBRARIES

Arg Arg His Pro Gln Leu Gln Arg Val Glu Met Asn Phe Ile Ser Leu
305 310 315 320

Phe Trp Pro Ser Leu Pro Thr Gly Ile Gln Ala Ala Tyr Glu Asp Phe
325 330 335

Asp Arg Asp Leu Ile Phe Leu Phe Lys Gly Asn Gln Tyr Trp Ala Leu
340 345 350

Ser Gly Tyr Asp Ile Leu Gln Gly Tyr Pro Lys Asp Ile Ser Asn Tyr
355 360 365

Gly Phe Pro Ser Ser Val Gln Ala Ile Asp Ala Ala Val Phe Tyr Arg
370 375 380

Ser Lys Thr Tyr Phe Phe Val Asn Asp Gln Phe Trp Arg Tyr Asp Asn
385 390 395 400

Gln Arg Gln Phe Met Glu Pro Gly Tyr Pro Lys Ser Ile Ser Gly Ala
405 410 415

Phe Pro Gly Ile Glu Ser Lys Val Asp Ala Val Phe Gln Gln Glu His
420 425 430

Phe Phe His Val Phe Ser Gly Pro Arg Tyr Tyr Ala Phe Asp Leu Ile
435 440 445

Ala Gln Arg Val Thr Arg Val Ala Arg Gly Asn Lys Trp Leu Asn Cys
450 455 460

Arg Tyr Gly
465

<210> 177
<211> 1401
<212> PRT
<213> Homo sapiens

<400> 177
Ala Thr Gly Thr Thr Cys Thr Cys Cys Cys Thr Gly Ala Ala Gly Ala
1 5 10 15

Cys Gly Cys Thr Thr Cys Cys Ala Thr Thr Cys Thr Gly Cys Thr
20 25 30

Cys Thr Thr Ala Cys Thr Cys Cys Ala Thr Gly Thr Gly Cys Ala Gly

35 40 45

Ala Thr Thr Thr Cys Cys Ala Ala Gly Gly Cys Cys Thr Thr Thr Cys
50 55 60

Cys Thr Gly Thr Ala Thr Cys Thr Thr Cys Thr Ala Ala Ala Gly Ala
65 70 75 80

Gly Ala Ala Ala Ala Ala Thr Ala Cys Ala Ala Ala Ala Cys Thr
85 90 95

Gly Thr Thr Cys Ala Gly Gly Ala Cys Thr Ala Cys Cys Thr Gly Gly
100 105 110

Ala Ala Ala Ala Gly Thr Thr Cys Thr Ala Cys Cys Ala Ala Thr Thr
115 120 125

Ala Cys Cys Ala Ala Gly Cys Ala Ala Cys Cys Ala Gly Thr Ala Thr
130 135 140

Cys Ala Gly Thr Cys Thr Ala Cys Ala Ala Gly Gly Ala Ala Gly Ala
145 150 155 160

Ala Thr Gly Gly Cys Ala Cys Thr Ala Ala Thr Gly Thr Gly Ala Thr
165 170 175

Cys Gly Thr Thr Gly Ala Ala Ala Ala Gly Cys Thr Thr Ala Ala Ala
180 185 190

Gly Ala Ala Ala Thr Gly Cys Ala Gly Cys Gly Ala Thr Thr Thr Thr
195 200 205

Thr Thr Gly Gly Thr Thr Gly Ala Ala Thr Gly Thr Gly Ala Cys
210 215 220

Gly Gly Gly Ala Ala Gly Cys Cys Ala Ala Ala Thr Gly Ala Gly
225 230 235 240

Gly Ala Ala Ala Cys Thr Cys Thr Gly Gly Ala Cys Ala Thr Gly Ala
245 250 255

Thr Gly Ala Ala Ala Ala Gly Cys Cys Thr Cys Gly Cys Thr Gly
260 265 270

Thr Gly Gly Ala Gly Thr Gly Cys Cys Thr Gly Ala Cys Ala Gly Thr
275 280 285

Gly Gly Thr Gly Gly Thr Thr Thr Ala Thr Gly Thr Thr Ala Ala

PROTEIN SEQUENCES

290	295	300
Cys Cys Cys Cys Ala Gly Gly Ala Ala Ala Cys Cys Cys Cys Ala Ala		
305	310	315
Gly Thr Gly Gly Ala Ala Cys Gly Cys Ala Cys Thr Ala Ala Cys		
325	330	335
Thr Thr Gly Ala Cys Cys Thr Ala Cys Ala Gly Gly Ala Thr Thr Cys		
340	345	350
Gly Ala Ala Ala Cys Thr Ala Thr Ala Cys Cys Cys Cys Ala Cys Ala		
355	360	365
Gly Cys Thr Gly Thr Cys Ala Gly Ala Gly Gly Cys Thr Gly Ala Gly		
370	375	380
Gly Thr Ala Gly Ala Ala Ala Gly Ala Gly Cys Thr Ala Thr Cys Ala		
385	390	395
Ala Gly Gly Ala Thr Gly Cys Cys Thr Thr Gly Ala Ala Cys Thr		
405	410	415
Cys Thr Gly Gly Ala Gly Thr Gly Thr Thr Gly Cys Ala Thr Cys Ala		
420	425	430
Cys Cys Thr Cys Thr Cys Ala Thr Cys Thr Thr Cys Ala Cys Cys Ala		
435	440	445
Gly Gly Ala Thr Cys Thr Cys Ala Cys Ala Gly Gly Gly Ala Gly Ala		
450	455	460
Gly Gly Cys Ala Gly Ala Thr Ala Thr Cys Ala Ala Cys Ala Thr Thr		
465	470	475
Gly Cys Thr Thr Thr Thr Ala Cys Cys Ala Ala Ala Gly Ala Gly		
485	490	495
Ala Thr Cys Ala Cys Gly Gly Thr Gly Ala Cys Ala Ala Thr Thr Cys		
500	505	510
Thr Cys Cys Ala Thr Thr Thr Gly Ala Thr Gly Gly Ala Cys Cys Cys		
515	520	525
Ala Ala Thr Gly Gly Ala Ala Thr Cys Cys Thr Thr Gly Cys Thr Cys		
530	535	540
Ala Thr Gly Cys Cys Thr Thr Cys Ala Gly Cys Cys Ala Gly Gly		

545 550 555 560
Cys Cys Ala Ala Gly Gly Thr Ala Thr Thr Gly Gly Ala
565 570 575
Gly Ala Thr Gly Cys Thr Cys Ala Thr Thr Thr Gly Ala Thr Gly
580 585 590
Cys Cys Gly Ala Ala Gly Ala Ala Cys Ala Thr Gly Gly Ala Cys
595 600 605
Cys Ala Ala Cys Ala Cys Cys Thr Cys Cys Gly Cys Ala Ala Ala Thr
610 615 620
Thr Ala Cys Ala Ala Cys Thr Thr Gly Thr Thr Cys Thr Thr Gly
625 630 635 640
Thr Thr Gly Cys Thr Gly Cys Thr Cys Ala Thr Gly Ala Ala Thr Thr
645 650 655
Thr Gly Gly Cys Cys Ala Thr Thr Cys Thr Thr Gly Gly Gly Gly
660 665 670
Cys Thr Cys Gly Cys Thr Cys Ala Cys Thr Cys Cys Thr Cys Thr Gly
675 680 685
Ala Cys Cys Cys Thr Gly Gly Thr Gly Cys Cys Thr Thr Gly Ala Thr
690 695 700
Gly Thr Ala Thr Cys Cys Ala Ala Cys Thr Ala Thr Gly Cys Thr
705 710 715 720
Thr Thr Cys Ala Gly Gly Ala Ala Ala Cys Cys Ala Gly Cys Ala
725 730 735
Ala Cys Thr Ala Cys Thr Cys Ala Cys Thr Cys Cys Cys Thr Cys Ala
740 745 750
Ala Gly Ala Thr Gly Ala Cys Ala Thr Cys Gly Ala Thr Gly Gly Cys
755 760 765
Ala Thr Thr Cys Ala Gly Gly Cys Cys Ala Thr Cys Thr Ala Thr Gly
770 775 780
Gly Ala Cys Thr Thr Cys Ala Ala Gly Cys Ala Ala Cys Cys Cys
785 790 795 800
Thr Ala Thr Cys Cys Ala Ala Cys Cys Thr Ala Cys Thr Gly Gly Ala

D E F G H I J K L

	805	810	815
Cys Cys Ala Ala Gly Cys Ala Cys Cys Cys Ala Ala Ala Cys			
820	825	830	
Cys Cys Thr Gly Thr Gly Ala Cys Cys Cys Ala Gly Thr Thr Thr			
835	840	845	
Gly Ala Cys Ala Thr Thr Thr Gly Ala Thr Gly Cys Thr Ala Thr Cys			
850	855	860	
Ala Cys Cys Ala Cys Ala Cys Thr Cys Cys Gly Thr Gly Gly Ala Gly			
865	870	875	880
Ala Ala Ala Thr Ala Cys Thr Thr Thr Cys Thr Thr Thr Ala Ala			
885	890	895	
Ala Gly Ala Cys Ala Gly Gly Thr Ala Cys Thr Thr Cys Thr Gly Gly			
900	905	910	
Ala Gly Ala Ala Gly Gly Cys Ala Thr Cys Cys Thr Cys Ala Gly Cys			
915	920	925	
Thr Ala Cys Ala Ala Ala Gly Ala Gly Thr Cys Gly Ala Ala Ala Thr			
930	935	940	
Gly Ala Ala Thr Thr Thr Ala Thr Thr Thr Cys Thr Cys Thr Ala			
945	950	955	960
Thr Thr Cys Thr Gly Gly Cys Cys Ala Thr Cys Cys Cys Thr Thr Cys			
965	970	975	
Cys Ala Ala Cys Thr Gly Gly Thr Ala Thr Ala Cys Ala Gly Gly Cys			
980	985	990	
Thr Gly Cys Thr Thr Ala Thr Gly Ala Ala Gly Ala Thr Thr Thr Thr			
995	1000	1005	
Gly Ala Cys Ala Gly Ala Gly Ala Cys Cys Thr Cys Ala Thr Thr Thr			
1010	1015	1020	
Thr Cys Cys Thr Ala Thr Thr Ala Ala Ala Gly Gly Cys Ala Ala			
1025	1030	1035	1040
Cys Cys Ala Ala Thr Ala Cys Thr Gly Gly Cys Thr Cys Thr Gly			
1045	1050	1055	
Ala Gly Thr Gly Gly Cys Thr Ala Thr Gly Ala Thr Ala Thr Thr Cys			

1060 1065 1070
Thr Gly Cys Ala Ala Gly Gly Thr Thr Ala Thr Cys Cys Cys Ala Ala
1075 1080 1085

Gly Gly Ala Thr Ala Thr Ala Thr Cys Ala Ala Cys Thr Ala Thr
1090 1095 1100

Gly Gly Cys Thr Thr Cys Cys Cys Ala Gly Cys Ala Gly Cys Gly
1105 1110 1115 1120

Thr Cys Cys Ala Ala Gly Cys Ala Ala Thr Thr Gly Ala Cys Gly Cys
1125 1130 1135

Ala Gly Cys Thr Gly Thr Thr Thr Cys Thr Ala Cys Ala Gly Ala
1140 1145 1150

Ala Gly Thr Ala Ala Ala Cys Ala Thr Ala Cys Thr Thr Cys Thr
1155 1160 1165

Thr Thr Gly Thr Ala Ala Ala Thr Gly Ala Cys Cys Ala Ala Thr Thr
1170 1175 1180

Cys Thr Gly Gly Ala Gly Ala Thr Ala Thr Gly Ala Thr Ala Ala Cys
1185 1190 1195 1200

Cys Ala Ala Ala Gly Ala Cys Ala Ala Thr Thr Cys Ala Thr Gly Gly
1205 1210 1215

Ala Gly Cys Cys Ala Gly Gly Thr Thr Ala Thr Cys Cys Cys Ala Ala
1220 1225 1230

Ala Ala Gly Cys Ala Thr Ala Thr Cys Ala Gly Gly Thr Gly Cys Cys
1235 1240 1245

Thr Thr Thr Cys Cys Ala Gly Gly Ala Ala Thr Ala Gly Ala Gly Ala
1250 1255 1260

Gly Thr Ala Ala Ala Gly Thr Thr Gly Ala Thr Gly Cys Ala Gly Thr
1265 1270 1275 1280

Thr Thr Thr Cys Cys Ala Gly Cys Ala Ala Gly Ala Ala Cys Ala Thr
1285 1290 1295

Thr Thr Cys Thr Thr Cys Cys Ala Thr Gly Thr Cys Thr Thr Cys Ala
1300 1305 1310

Gly Thr Gly Gly Ala Cys Cys Ala Ala Gly Ala Thr Ala Thr Thr Ala

1315

1320

1325

Cys Gly Cys Ala Thr Thr Thr Gly Ala Thr Cys Thr Thr Ala Thr Thr
1330 1335 1340

Gly Cys Thr Cys Ala Gly Ala Gly Thr Thr Ala Cys Cys Ala
1345 1350 1355 1360

Gly Ala Gly Thr Thr Gly Cys Ala Ala Gly Ala Gly Gly Cys Ala Ala
1365 1370 1375

Thr Ala Ala Ala Thr Gly Gly Cys Thr Thr Ala Ala Cys Thr Gly Thr
1380 1385 1390

Ala Gly Ala Thr Ala Thr Gly Gly Cys
1395 1400

<210> 178

<211> 471

<212> PRT

<213> Homo sapiens

<400> 178

Phe Pro Leu Val Arg Met Thr Glu Asn Glu Glu Asn Met Gln Leu Ala
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Gln Ala Tyr Leu Asn Gln Phe Tyr Ser Leu Glu Ile Glu Gly Asn His
20 25 30

Leu Val Gln Ser Lys Asn Arg Ser Leu Ile Asp Asp Lys Ile Arg Glu
35 40 45

Met Gln Ala Phe Phe Gly Leu Thr Val Thr Gly Lys Leu Asp Ser Asn
50 55 60

Thr Leu Glu Ile Met Lys Thr Pro Arg Cys Gly Val Pro Asp Val Gly
65 70 75 80

Gln Tyr Gly Tyr Thr Leu Pro Gly Trp Arg Lys Tyr Asn Leu Thr Tyr
85 90 95

Arg Ile Ile Asn Tyr Thr Pro Asp Met Ala Arg Ala Ala Val Asp Glu
100 105 110

Ala Ile Gln Glu Gly Leu Glu Val Trp Ser Lys Val Thr Pro Leu Lys
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Phe Thr Lys Ile Ser Lys Gly Ile Ala Asp Ile Met Ile Ala Phe Arg
130 135 140

Thr Arg Val His Gly Arg Cys Pro Arg Tyr Phe Asp Gly Pro Leu Gly
145 150 155 160

Val Leu Gly His Ala Phe Pro Pro Gly Pro Gly Leu Gly Gly Asp Thr
165 170 175

His Phe Asp Glu Asp Glu Asn Trp Thr Lys Asp Gly Ala Gly Phe Asn
180 185 190

Leu Phe Leu Val Ala Ala His Glu Phe Gly His Ala Leu Gly Leu Ser
195 200 205

His Ser Asn Asp Gln Thr Ala Leu Met Phe Pro Asn Tyr Val Ser Leu
210 215 220

Asp Pro Arg Lys Tyr Pro Leu Ser Gln Asp Asp Ile Asn Gly Ile Gln
225 230 235 240

Ser Ile Tyr Gly Gly Leu Pro Lys Val Pro Ala Lys Pro Lys Glu Pro
245 250 255

Thr Ile Pro His Ala Cys Asp Pro Asp Leu Thr Phe Asp Ala Ile Thr
260 265 270

Thr Phe Arg Arg Glu Val Met Phe Phe Lys Gly Arg His Leu Trp Arg
275 280 285

Ile Tyr Tyr Asp Ile Thr Asp Val Glu Phe Glu Leu Ile Ala Ser Phe
290 295 300

Trp Pro Ser Leu Pro Ala Asp Leu Gln Ala Ala Tyr Glu Asn Pro Arg
305 310 315 320

Asp Lys Ile Leu Val Phe Lys Asp Glu Asn Phe Trp Met Ile Arg Gly
325 330 335

Tyr Ala Val Leu Pro Asp Tyr Pro Lys Ser Ile His Thr Leu Gly Phe
340 345 350

Pro Gly Arg Val Lys Lys Ile Asp Ala Ala Val Cys Asp Lys Thr Thr
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Arg Lys Thr Tyr Phe Phe Val Gly Ile Trp Cys Trp Arg Phe Asp Glu
370 375 380

Met Thr Gln Thr Met Asp Lys Gly Phe Pro Gln Arg Val Val Lys His
385 400

Phe Pro Gly Ile Ser Ile Arg Val Asp Ala Ala Phe Gln Tyr Lys Gly
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Phe Phe Phe Ser Arg Gly Ser Lys Gln Phe Glu Tyr Asn Ile Lys
420 430

Thr Lys Asn Ile Thr Arg Ile Met Arg Thr Asn Thr Trp Phe Gln Cys
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Ala His Ser Gly Gly Ile Lys
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<210> 179

<211> 18

<212> PRT

<213> Homo sapiens

<400> 179

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Leu Leu

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<212> PRT

<213> Homo sapiens

<400> 180

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<210> 181

<211> 2467

<212> DNA

<213> Mus sp.

<400> 181

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<211> 1554
<212> DNA
<213> Mus sp.

<400> 182

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 aagaacagga gtctttga tgaaaactt cgaaaatgc aggattttt cgattgaca 240
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<210> 183

<211> 511

<212> PRT

<213> Mus sp.

<400> 183

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25

30

Ala Gln Ala Tyr Leu Asn Gln Phe Tyr Ser Leu Glu Ile Glu Gly Ser

35

40

45

His Phe Val Gln Ser Lys Asn Arg Ser Leu Phe Asp Gly Lys Leu Arg

50

55

60

Glu Met Gln Ala Phe Phe Gly Leu Thr Val Thr Gly Lys Leu Asp Ser
65 70 75 80

Asp Thr Leu Ala Ile Met Lys Val Pro Arg Cys Gly Val Pro Asp Val
85 90 95

Gly Gln Tyr Gly Tyr Thr Leu Pro Gly Trp Arg Lys Tyr Ser Leu Thr
100 105 110

Tyr Arg Ile Met Asn Tyr Thr Pro Asp Met Thr Pro Ala Asp Val Asp
115 120 125

Glu Ala Ile Gln Lys Ala Leu Gln Val Trp Ser Lys Val Thr Pro Leu
130 135 140

Thr Phe Thr Arg Ile Ser Lys Gly Val Ala Asp Ile Met Ile Ala Phe
145 150 155 160

Arg Thr Gly Val His Gly Trp Cys Pro Arg His Phe Asp Gly Pro Leu
165 170 175

Gly Val Leu Gly His Ala Phe Pro Pro Gly Leu Gly Leu Gly Asp
180 185 190

Thr His Phe Asp Glu Asp Glu Thr Trp Ile Ala Lys Asp Gly Glu Gly
195 200 205

Phe Asn Leu Phe Leu Val Ala Ala His Glu Phe Gly His Ser Leu Gly
210 215 220

Leu Ser His Ser Asn Asp Gln Thr Ala Leu Met Phe Pro Asn Tyr Ile
225 230 235 240

Ser Leu Asp Pro Ser Lys Tyr Pro Leu Ser Gln Asp Asp Ile Asp Gly
245 250 255

Ile Gln Ser Ile Tyr Gly Ser Pro Pro Lys Val Thr Thr Lys Pro Ser
260 265 270

Gly Asn Ser Glu Pro His Ala Cys Asp Pro Thr Leu Thr Phe Asp Ala
275 280 285

Ile Thr Thr Phe Arg Arg Glu Val Met Phe Phe Lys Gly Arg His Leu
290 295 300

Trp Arg Val Tyr Ser Asp Ile Ala Gly Ala Glu Phe Glu Phe Ile Asp
305 310 315 320

Ser Phe Trp Pro Ser Leu Pro Ala Asp Leu Gln Ala Ala Tyr Glu Ser
325 330 335

Pro Arg Asp Glu Leu Leu Val Phe Lys Asp Glu Asn Phe Trp Val Ile
340 345 350

Arg Gly Tyr Ser Val Leu Pro Gly Tyr Pro Lys Ser Ile His Thr Leu
355 360 365

Gly Phe Pro Arg Arg Val Lys Lys Ile Asp Ala Ala Val Cys Asp His
370 375 380

Asp Thr Arg Lys Thr Phe Phe Val Gly Ile Trp Cys Trp Arg Tyr
385 390 395 400

Asp Glu Met Ala Gln Ala Met Asp Arg Gly Phe Pro Gln Arg Ile Ile
405 410 415

Lys Cys Phe Pro Gly Ile Arg Leu Arg Val Asp Ala Val Phe Gln His
420 425 430

Asn Gly Phe Leu Tyr Phe Phe His Gly Ser Arg Gln Phe Glu Tyr Asp
435 440 445

Met Lys Ala Lys Asn Ile Thr Gln Val Ile Lys Thr Asn Ser Trp Phe
450 455 460

Leu Cys Asn Glu Pro Leu Asn Ala Ser Phe Asn Val Ser Val Lys Gly
465 470 475 480

Lys Ala Asn Ser Ile Gly Thr Val Ile Leu His His Lys Arg Leu Ser
485 490 495

Leu Leu Thr Phe Ser Ile Val His Val Leu Thr Lys Thr Tyr Asn
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<210> 184
<211> 17
<212> PRT
<213> Mus sp.

<400> 184

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Ala

210> 185
<211> 494
<212> PRT
<213> Mus sp.

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Phe Val Gln Ser Lys Asn Arg Ser Leu Phe Asp Gly Lys Leu Arg Glu
35 40 45
Met Gln Ala Phe Phe Gly Leu Thr Val Thr Gly Lys Leu Asp Ser Asp
50 55 60
Thr Leu Ala Ile Met Lys Val Pro Arg Cys Gly Val Pro Asp Val Gly
65 70 75 80
Gln Tyr Gly Tyr Thr Leu Pro Gly Trp Arg Lys Tyr Ser Leu Thr Tyr
85 90 95
Arg Ile Met Asn Tyr Thr Pro Asp Met Thr Pro Ala Asp Val Asp Glu
100 105 110
Ala Ile Gln Lys Ala Leu Gln Val Trp Ser Lys Val Thr Pro Leu Thr
115 120 125
Phe Thr Arg Ile Ser Lys Gly Val Ala Asp Ile Met Ile Ala Phe Arg
130 135 140
Thr Gly Val His Gly Trp Cys Pro Arg His Phe Asp Gly Pro Leu Gly
145 150 155 160
Val Leu Gly His Ala Phe Pro Pro Gly Leu Gly Leu Gly Gly Asp Thr
165 170 175
His Phe Asp Glu Asp Glu Thr Trp Ile Ala Lys Asp Gly Glu Gly Phe
180 185 190
Asn Leu Phe Leu Val Ala Ala His Glu Phe Gly His Ser Leu Gly Leu
195 200 205
Ser His Ser Asn Asp Gln Thr Ala Leu Met Phe Pro Asn Tyr Ile Ser

210 215 220
Leu Asp Pro Ser Lys Tyr Pro Leu Ser Gln Asp Asp Ile Asp Gly Ile
225 230 235 240

Gln Ser Ile Tyr Gly Ser Pro Pro Lys Val Thr Thr Lys Pro Ser Gly
245 250 255

Asn Ser Glu Pro His Ala Cys Asp Pro Thr Leu Thr Phe Asp Ala Ile
260 265 270

Thr Thr Phe Arg Arg Glu Val Met Phe Phe Lys Gly Arg His Leu Trp
275 280 285

Arg Val Tyr Ser Asp Ile Ala Gly Ala Glu Phe Glu Phe Ile Asp Ser
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Phe Trp Pro Ser Leu Pro Ala Asp Leu Gln Ala Ala Tyr Glu Ser Pro
305 310 315 320

Arg Asp Glu Leu Leu Val Phe Lys Asp Glu Asn Phe Trp Val Ile Arg
325 330 335

Gly Tyr Ser Val Leu Pro Gly Tyr Pro Lys Ser Ile His Thr Leu Gly
340 345 350

Phe Pro Arg Arg Val Lys Lys Ile Asp Ala Ala Val Cys Asp His Asp
355 360 365

Thr Arg Lys Thr Phe Phe Phe Val Gly Ile Trp Cys Trp Arg Tyr Asp
370 375 380

Glu Met Ala Gln Ala Met Asp Arg Gly Phe Pro Gln Arg Ile Ile Lys
385 390 395 400

Cys Phe Pro Gly Ile Arg Leu Arg Val Asp Ala Val Phe Gln His Asn
405 410 415

Gly Phe Leu Tyr Phe Phe His Gly Ser Arg Gln Phe Glu Tyr Asp Met
420 425 430

Lys Ala Lys Asn Ile Thr Gln Val Ile Lys Thr Asn Ser Trp Phe Leu
435 440 445

Cys Asn Glu Pro Leu Asn Ala Ser Phe Asn Val Ser Val Lys Gly Lys
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Ala Asn Ser Ile Gly Thr Val Ile Leu His His Lys Arg Leu Ser Leu

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Leu Thr Phe Ser Ile Val His Val Leu Thr Lys Thr Tyr Asn
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<210> 191
<211> 2628
<212> DNA
<213> Homo sapiens

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 <212> DNA
 <213> Homo sapiens

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<210> 193
 <211> 353
 <212> PRT
 <213> Homo sapiens

<400> 193

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Thr	Arg	Pro	Cys	Phe	Pro	Gly	Cys	Gln	Cys	Glu	Val	Glu	Thr	Phe	Gly
								20				25		30	

Leu	Phe	Asp	Ser	Phe	Ser	Leu	Thr	Arg	Val	Asp	Cys	Ser	Gly	Leu	Gly
							35				40		45		

Pro	His	Ile	Met	Pro	Val	Pro	Ile	Pro	Leu	Asp	Thr	Ala	His	Leu	Asp
			50					55			60				

Leu	Ser	Ser	Asn	Arg	Leu	Glu	Met	Val	Asn	Glu	Ser	Val	Leu	Ala	Gly
					65			70			75		80		

Pro	Gly	Tyr	Thr	Thr	Leu	Ala	Gly	Leu	Asp	Leu	Ser	His	Asn	Leu	Leu
					85				90			95			

Thr	Ser	Ile	Ser	Pro	Thr	Ala	Phe	Ser	Arg	Leu	Arg	Tyr	Leu	Glu	Ser
					100			105			110				

Leu	Asp	Leu	Ser	His	Asn	Gly	Leu	Thr	Ala	Leu	Pro	Ala	Glu	Ser	Phe
					115			120			125				

Thr	Ser	Ser	Pro	Leu	Ser	Asp	Val	Asn	Leu	Ser	His	Asn	Gln	Leu	Arg
					130			135			140				

Glu	Val	Ser	Val	Ser	Ala	Phe	Thr	Thr	His	Ser	Gln	Gly	Arg	Ala	Leu
					145			150			155		160		

F O U N D E R

His Val Asp Leu Ser His Asn Leu Ile His Arg Leu Val Pro His Pro
165 170 175

Thr Arg Ala Gly Leu Pro Ala Pro Thr Ile Gln Ser Leu Asn Leu Ala
180 185 190

Trp Asn Arg Leu His Ala Val Pro Asn Leu Arg Asp Leu Pro Leu Arg
195 200 205

Tyr Leu Ser Leu Asp Gly Asn Pro Leu Ala Val Ile Gly Pro Gly Ala
210 215 220

Phe Ala Gly Leu Gly Gly Leu Thr His Leu Ser Leu Ala Ser Leu Gln
225 230 235 240

Arg Leu Pro Glu Leu Ala Pro Ser Gly Phe Arg Glu Leu Pro Gly Leu
245 250 255

Gln Val Leu Asp Leu Ser Gly Asn Pro Lys Leu Asn Trp Ala Gly Ala
260 265 270

Glu Val Phe Ser Gly Leu Ser Ser Leu Gln Glu Leu Asp Leu Ser Gly
275 280 285

Thr Asn Leu Val Pro Leu Pro Glu Ala Leu Leu Leu His Leu Pro Ala
290 295 300

Leu Gln Ser Val Ser Val Gly Gln Asp Val Arg Cys Arg Arg Leu Val
305 310 315 320

Arg Glu Gly Thr Tyr Pro Arg Arg Pro Gly Ser Ser Pro Lys Val Ala
325 330 335

Leu His Cys Val Asp Thr Arg Glu Ser Ala Ala Arg Gly Pro Thr Ile
340 345 350

Leu

<210> 194
<211> 16
<212> PRT
<213> Homo sapiens

<400> 194
Met Pro Trp Pro Leu Leu Leu Leu Ala Val Ser Gly Ala Gln Thr

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<210> 195

<211> 337

<212> PRT

<213> Homo sapiens

<400> 195

Thr Arg Pro Cys Phe Pro Gly Cys Gln Cys Glu Val Glu Thr Phe Gly
1 5 10 15

Leu Phe Asp Ser Phe Ser Leu Thr Arg Val Asp Cys Ser Gly Leu Gly
20 25 30

Pro His Ile Met Pro Val Pro Ile Pro Leu Asp Thr Ala His Leu Asp
35 40 45

Leu Ser Ser Asn Arg Leu Glu Met Val Asn Glu Ser Val Leu Ala Gly
50 55 60

Pro Gly Tyr Thr Thr Leu Ala Gly Leu Asp Leu Ser His Asn Leu Leu
65 70 75 80

Thr Ser Ile Ser Pro Thr Ala Phe Ser Arg Leu Arg Tyr Leu Glu Ser
85 90 95

Leu Asp Leu Ser His Asn Gly Leu Thr Ala Leu Pro Ala Glu Ser Phe
100 105 110

Thr Ser Ser Pro Leu Ser Asp Val Asn Leu Ser His Asn Gln Leu Arg
115 120 125

Glu Val Ser Val Ser Ala Phe Thr Thr His Ser Gln Gly Arg Ala Leu
130 135 140

His Val Asp Leu Ser His Asn Leu Ile His Arg Leu Val Pro His Pro
145 150 155 160

Thr Arg Ala Gly Leu Pro Ala Pro Thr Ile Gln Ser Leu Asn Leu Ala
165 170 175

Trp Asn Arg Leu His Ala Val Pro Asn Leu Arg Asp Leu Pro Leu Arg
180 185 190

Tyr Leu Ser Leu Asp Gly Asn Pro Leu Ala Val Ile Gly Pro Gly Ala
195 200 205

Phe Ala Gly Leu Gly Gly Leu Thr His Leu Ser Leu Ala Ser Leu Gln
210 215 220

Arg Leu Pro Glu Leu Ala Pro Ser Gly Phe Arg Glu Leu Pro Gly Leu
225 230 235 240 |

Gln Val Leu Asp Leu Ser Gly Asn Pro Lys Leu Asn Trp Ala Gly Ala
245 250 255

Glu Val Phe Ser Gly Leu Ser Ser Leu Gln Glu Leu Asp Leu Ser Gly
260 265 270

Thr Asn Leu Val Pro Leu Pro Glu Ala Leu Leu Leu His Leu Pro Ala
275 280 285

Leu Gln Ser Val Ser Val Gly Gln Asp Val Arg Cys Arg Arg Leu Val
290 295 300

Arg Glu Gly Thr Tyr Pro Arg Arg Pro Gly Ser Ser Pro Lys Val Ala
305 310 315 320

Leu His Cys Val Asp Thr Arg Glu Ser Ala Ala Arg Gly Pro Thr Ile
325 330 335

Leu

<210> 196
<211> 200
<212> PRT
<213> Homo sapiens

<400> 196

Thr Arg Pro Cys Phe Pro Gly Cys Gln Cys Glu Val Glu Thr Phe Gly
1 5 10 15

Leu Phe Asp Ser Phe Ser Leu Thr Arg Val Asp Cys Ser Gly Leu Gly
20 25 30

Pro His Ile Met Pro Val Pro Ile Pro Leu Asp Thr Ala His Leu Asp
35 40 45

Leu Ser Ser Asn Arg Leu Glu Met Val Asn Glu Ser Val Leu Ala Gly
50 55 60

Pro Gly Tyr Thr Thr Leu Ala Gly Leu Asp Leu Ser His Asn Leu Leu
65 70 75 80

EQUUS 2000

Thr Ser Ile Ser Pro Thr Ala Phe Ser Arg Leu Arg Tyr Leu Glu Ser
85 90 95

Leu Asp Leu Ser His Asn Gly Leu Thr Ala Leu Pro Ala Glu Ser Phe
100 105 110

Thr Ser Ser Pro Leu Ser Asp Val Asn Leu Ser His Asn Gln Leu Arg
115 120 125

Glu Val Ser Val Ser Ala Phe Thr Thr His Ser Gln Gly Arg Ala Leu
130 135 140

His Val Asp Leu Ser His Asn Leu Ile His Arg Leu Val Pro His Pro
145 150 155 160

Thr Arg Ala Gly Leu Pro Ala Pro Thr Ile Gln Ser Leu Asn Leu Ala
165 170 175

Trp Asn Arg Leu His Ala Val Pro Asn Leu Arg Asp Leu Pro Leu Arg
180 185 190

Tyr Leu Ser Leu Asp Gly Asn Pro
195 200

<210> 197

<211> 23

<212> PRT

<213> Homo sapiens

<400> 197

Leu Ala Val Ile Gly Pro Gly Ala Phe Ala Gly Leu Gly Gly Leu Thr
1 5 10 15

His Leu Ser Leu Ala Ser Leu
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<210> 198

<211> 114

<212> PRT

<213> Homo sapiens

<400> 198

Gln Arg Leu Pro Glu Leu Ala Pro Ser Gly Phe Arg Glu Leu Pro Gly
1 5 10 15

Leu Gln Val Leu Asp Leu Ser Gly Asn Pro Lys Leu Asn Trp Ala Gly
20 25 30

Ala Glu Val Phe Ser Gly Leu Ser Ser Leu Gln Glu Leu Asp Leu Ser
35 40 45

Gly Thr Asn Leu Val Pro Leu Pro Glu Ala Leu Leu His Leu Pro
50 55 60

Ala Leu Gln Ser Val Ser Val Gly Gln Asp Val Arg Cys Arg Arg Leu
65 70 75 80

Val Arg Glu Gly Thr Tyr Pro Arg Arg Pro Gly Ser Ser Pro Lys Val
85 90 95

Ala Leu His Cys Val Asp Thr Arg Glu Ser Ala Ala Arg Gly Pro Thr
100 105 110

Ile Leu

<210> 199
<400> 199
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<210> 200
<400> 200
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<210> 201
<211> 3770
<212> DNA
<213> Homo sapiens

<400> 201
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cctggtcatt gctgggtct tctggatcca ccggcttac aagttcatct ataacatttg 600

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<210> 202

<211> 2337

<212> DNA

<213> Homo sapiens

<400> 202

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<210> 203

<211> 778

<212> PRT

<213> Homo sapiens

<400> 203

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Ala Phe Thr Thr Phe Leu Val Ser Cys Val Asp Tyr Asp Ile Leu Phe
20 25 30

Ala Asn Lys Met Val Asn His Ser Leu His Pro Thr Glu Pro Val Lys
35 40 45

Val Thr Leu Pro Asp Ala Phe Leu Pro Ala Gln Val Cys Ser Ala Arg
50 55 60

Ile Gln Glu Asn Gly Ser Leu Ile Thr Ile Leu Val Ile Ala Gly Val
65 70 75 80

Phe Trp Ile His Arg Leu Ile Lys Phe Ile Tyr Asn Ile Cys Cys Tyr
85 90 95

Trp Glu Ile His Ser Phe Tyr Leu His Ala Leu Arg Ile Pro Met Ser
100 105 110

Ala Leu Pro Tyr Cys Thr Trp Gln Glu Val Gln Ala Arg Ile Val Gln
115 120 125

Thr Gln Lys Glu His Gln Ile Cys Ile His Lys Arg Glu Leu Thr Glu
130 135 140

Leu Asp Ile Tyr His Arg Ile Leu Arg Phe Gln Asn Tyr Met Val Ala
145 150 155 160

Leu Val Asn Lys Ser Leu Leu Pro Leu Arg Phe Arg Leu Pro Gly Leu
165 170 175

Gly Glu Ala Val Phe Phe Thr Arg Gly Leu Lys Tyr Asn Phe Glu Leu
180 185 190

Ile Leu Phe Trp Gly Pro Gly Ser Leu Phe Leu Asn Glu Trp Ser Leu
195 200 205

Lys Ala Glu Tyr Lys Arg Gly Gly Gln Arg Leu Glu Leu Ala Gln Arg
210 215 220

Leu Ser Asn Arg Ile Leu Trp Ile Gly Ile Ala Asn Phe Leu Leu Cys
225 230 235 240

Pro Leu Ile Leu Ile Trp Gln Ile Leu Tyr Ala Phe Phe Ser Tyr Ala
245 250 255

Glu Val Leu Lys Arg Glu Pro Gly Ala Leu Gly Ala Arg Cys Trp Ser
260 265 270

Leu Tyr Gly Arg Cys Tyr Leu Arg His Phe Asn Glu Leu Glu His Glu
275 280 285

Leu Gln Ser Arg Leu Asn Arg Gly Tyr Lys Pro Ala Ser Lys Tyr Met
290 295 300

Asn Cys Phe Leu Ser Pro Leu Leu Thr Leu Leu Ala Lys Asn Gly Ala
305 310 315 320

Phe Phe Ala Gly Ser Ile Leu Ala Val Leu Ile Ala Leu Thr Ile Tyr
325 330 335

Asp Glu Asp Val Leu Ala Val Glu His Val Leu Thr Thr Val Thr Leu
340 345 350

Leu Gly Val Thr Val Thr Val Cys Arg Ser Phe Ile Pro Asp Gln His
355 360 365

Met Val Phe Cys Pro Glu Gln Leu Leu Arg Val Ile Leu Ala His Ile
370 375 380

His Tyr Met Pro Asp His Trp Gln Gly Asn Ala His Arg Ser Gln Thr
385 390 395 400

Arg Asp Glu Phe Ala Gln Leu Phe Gln Tyr Lys Ala Val Phe Ile Leu
405 410 415

Glu Glu Leu Leu Ser Pro Ile Val Thr Pro Leu Ile Leu Ile Phe Cys
420 425 430

Leu Arg Pro Arg Ala Leu Glu Ile Ile Asp Phe Phe Arg Asn Phe Thr
435 440 445

Val Glu Val Val Gly Val Gly Asp Thr Cys Ser Phe Ala Gln Met Asp
450 455 460

Val Arg Gln His Gly His Pro Gln Trp Leu Ser Ala Gly Gln Thr Glu
465 470 475 480

Ala Ser Val Tyr Gln Gln Ala Glu Asp Gly Lys Thr Glu Leu Ser Leu
485 490 495

Met His Phe Ala Ile Thr Asn Pro Gly Trp Gln Pro Pro Arg Glu Ser
500 505 510

Thr Ala Phe Leu Gly Phe Leu Lys Glu Gln Val Gln Arg Asp Gly Ala
515 520 525

Ala Ala Ser Leu Ala Gln Gly Gly Leu Leu Pro Glu Asn Ala Leu Phe
530 535 540

Thr Ser Ile Gln Ser Leu Gln Ser Glu Ser Glu Pro Leu Ser Leu Ile
545 550 555 560

Ala Asn Val Val Ala Gly Ser Ser Cys Arg Gly Pro Pro Leu Pro Arg
565 570 575

Asp Leu Gln Gly Ser Arg His Arg Ala Glu Val Ala Ser Ala Leu Arg
580 585 590

Ser Phe Ser Pro Leu Gln Pro Gly Gln Ala Pro Thr Gly Arg Ala His
595 600 605

Ser Thr Met Thr Gly Ser Gly Val Asp Ala Arg Thr Ala Ser Ser Gly
610 615 620

Ser Ser Val Trp Glu Gly Gln Leu Gln Ser Leu Val Leu Ser Glu Tyr
625 630 635 640

Ala Ser Thr Glu Met Ser Leu His Ala Leu Tyr Met His Gln Leu His
645 650 655

Lys Gln Gln Ala Gln Ala Glu Pro Glu Arg His Val Trp His Arg Arg
660 665 670

Glu Ser Asp Glu Ser Gly Glu Ser Ala Pro Asp Glu Gly Gly Glu Gly
675 680 685

Ala Arg Ala Pro Gln Ser Ile Pro Arg Ser Ala Ser Tyr Pro Cys Ala
690 695 700

Ala Pro Arg Pro Gly Ala Pro Glu Thr Thr Ala Leu His Gly Gly Phe
705 710 715 720

Gln Arg Arg Tyr Gly Gly Ile Thr Asp Pro Gly Thr Val Pro Arg Val
725 730 735

Pro Ser His Phe Ser Arg Leu Pro Leu Gly Gly Trp Ala Glu Asp Gly
740 745 750

Gln Ser Ala Ser Arg His Pro Glu Pro Val Pro Glu Glu Gly Ser Glu
755 760 765

Asp Glu Leu Pro Pro Gln Val His Lys Val
770 775

<210> 204

<211> 25

<212> PRT

<213> Homo sapiens

<400> 204

Met Leu Ile Gly Glu Ile Phe Glu Leu Met Gln Phe Leu Phe Val Val
1 5 10 15

Ala Phe Thr Thr Phe Leu Val Ser Cys
20 25

<210> 205

<211> 753

<212> PRT

<213> Homo sapiens

<400> 205

Val Asp Tyr Asp Ile Leu Phe Ala Asn Lys Met Val Asn His Ser Leu
1 5 10 15

His Pro Thr Glu Pro Val Lys Val Thr Leu Pro Asp Ala Phe Leu Pro
20 25 30

Ala Gln Val Cys Ser Ala Arg Ile Gln Glu Asn Gly Ser Leu Ile Thr
35 40 45

Ile Leu Val Ile Ala Gly Val Phe Trp Ile His Arg Leu Ile Lys Phe
50 55 60

Ile Tyr Asn Ile Cys Cys Tyr Trp Glu Ile His Ser Phe Tyr Leu His

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65	70	75	80
Ala Leu Arg Ile Pro Met Ser Ala Leu Pro Tyr Cys Thr Trp Gln Glu			
85	90	95	
Val Gln Ala Arg Ile Val Gln Thr Gln Lys Glu His Gln Ile Cys Ile			
100	105	110	
His Lys Arg Glu Leu Thr Glu Leu Asp Ile Tyr His Arg Ile Leu Arg			
115	120	125	
Phe Gln Asn Tyr Met Val Ala Leu Val Asn Lys Ser Leu Leu Pro Leu			
130	135	140	
Arg Phe Arg Leu Pro Gly Leu Gly Glu Ala Val Phe Phe Thr Arg Gly			
145	150	155	160
Leu Lys Tyr Asn Phe Glu Leu Ile Leu Phe Trp Gly Pro Gly Ser Leu			
165	170	175	
Phe Leu Asn Glu Trp Ser Leu Lys Ala Glu Tyr Lys Arg Gly Gly Gln			
180	185	190	
Arg Leu Glu Leu Ala Gln Arg Leu Ser Asn Arg Ile Leu Trp Ile Gly			
195	200	205	
Ile Ala Asn Phe Leu Leu Cys Pro Leu Ile Leu Ile Trp Gln Ile Leu			
210	215	220	
Tyr Ala Phe Phe Ser Tyr Ala Glu Val Leu Lys Arg Glu Pro Gly Ala			
225	230	235	240
Leu Gly Ala Arg Cys Trp Ser Leu Tyr Gly Arg Cys Tyr Leu Arg His			
245	250	255	
Phe Asn Glu Leu Glu His Glu Leu Gln Ser Arg Leu Asn Arg Gly Tyr			
260	265	270	
Lys Pro Ala Ser Lys Tyr Met Asn Cys Phe Leu Ser Pro Leu Leu Thr			
275	280	285	
Leu Leu Ala Lys Asn Gly Ala Phe Phe Ala Gly Ser Ile Leu Ala Val			
290	295	300	
Leu Ile Ala Leu Thr Ile Tyr Asp Glu Asp Val Leu Ala Val Glu His			
305	310	315	320
Val Leu Thr Thr Val Thr Leu Leu Gly Val Thr Val Thr Val Cys Arg			

325 330 335

Ser Phe Ile Pro Asp Gln His Met Val Phe Cys Pro Glu Gln Leu Leu
340 345 350

Arg Val Ile Leu Ala His Ile His Tyr Met Pro Asp His Trp Gln Gly
355 360 365

Asn Ala His Arg Ser Gln Thr Arg Asp Glu Phe Ala Gln Leu Phe Gln
370 375 380

Tyr Lys Ala Val Phe Ile Leu Glu Glu Leu Leu Ser Pro Ile Val Thr
385 390 395 400

Pro Leu Ile Leu Ile Phe Cys Leu Arg Pro Arg Ala Leu Glu Ile Ile
405 410 415

Asp Phe Phe Arg Asn Phe Thr Val Glu Val Val Gly Val Gly Asp Thr
420 425 430

Cys Ser Phe Ala Gln Met Asp Val Arg Gln His Gly His Pro Gln Trp
435 440 445

Leu Ser Ala Gly Gln Thr Glu Ala Ser Val Tyr Gln Gln Ala Glu Asp
450 455 460

Gly Lys Thr Glu Leu Ser Leu Met His Phe Ala Ile Thr Asn Pro Gly
465 470 475 480

Trp Gln Pro Pro Arg Glu Ser Thr Ala Phe Leu Gly Phe Leu Lys Glu
485 490 495

Gln Val Gln Arg Asp Gly Ala Ala Ala Ser Leu Ala Gln Gly Gly Leu
500 505 510

Leu Pro Glu Asn Ala Leu Phe Thr Ser Ile Gln Ser Leu Gln Ser Glu
515 520 525

Ser Glu Pro Leu Ser Leu Ile Ala Asn Val Val Ala Gly Ser Ser Cys
530 535 540

Arg Gly Pro Pro Leu Pro Arg Asp Leu Gln Gly Ser Arg His Arg Ala
545 550 555 560

Glu Val Ala Ser Ala Leu Arg Ser Phe Ser Pro Leu Gln Pro Gly Gln
565 570 575

Ala Pro Thr Gly Arg Ala His Ser Thr Met Thr Gly Ser Gly Val Asp

TOP SECRET//NOFORN

580

585

590

Ala Arg Thr Ala Ser Ser Gly Ser Ser Val Trp Glu Gly Gln Leu Gln
595 600 605

Ser Leu Val Leu Ser Glu Tyr Ala Ser Thr Glu Met Ser Leu His Ala
610 615 620

Leu Tyr Met His Gln Leu His Lys Gln Gln Ala Gln Ala Glu Pro Glu
625 630 635 640

Arg His Val Trp His Arg Arg Glu Ser Asp Glu Ser Gly Glu Ser Ala
645 650 655

Pro Asp Glu Gly Glu Gly Ala Arg Ala Pro Gln Ser Ile Pro Arg
660 665 670

Ser Ala Ser Tyr Pro Cys Ala Ala Pro Arg Pro Gly Ala Pro Glu Thr
675 680 685

Thr Ala Leu His Gly Gly Phe Gln Arg Arg Tyr Gly Gly Ile Thr Asp
690 695 700

Pro Gly Thr Val Pro Arg Val Pro Ser His Phe Ser Arg Leu Pro Leu
705 710 715 720

Gly Gly Trp Ala Glu Asp Gly Gln Ser Ala Ser Arg His Pro Glu Pro
725 730 735

Val Pro Glu Glu Gly Ser Glu Asp Glu Leu Pro Pro Gln Val His Lys
740 745 750

Val

<210> 206

<211> 45

<212> PRT

<213> Homo sapiens

<400> 206

Val Asp Tyr Asp Ile Leu Phe Ala Asn Lys Met Val Asn His Ser Leu
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His Pro Thr Glu Pro Val Lys Val Thr Leu Pro Asp Ala Phe Leu Pro
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Ala Gln Val Cys Ser Ala Arg Ile Gln Glu Asn Gly Ser
 35 40 45

<210> 207
 <211> 17
 <212> PRT
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<400> 207
 Leu Ile Thr Ile Leu Val Ile Ala Gly Val Phe Trp Ile His Arg Leu
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Ile

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 <211> 141
 <212> PRT
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<400> 208
 Lys Phe Ile Tyr Asn Ile Cys Cys Tyr Trp Glu Ile His Ser Phe Tyr
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Leu His Ala Leu Arg Ile Pro Met Ser Ala Leu Pro Tyr Cys Thr Trp
 20 25 30

Gln Glu Val Gln Ala Arg Ile Val Gln Thr Gln Lys Glu His Gln Ile
 35 40 45

Cys Ile His Lys Arg Glu Leu Thr Glu Leu Asp Ile Tyr His Arg Ile
 50 55 60

Leu Arg Phe Gln Asn Tyr Met Val Ala Leu Val Asn Lys Ser Leu Leu
 65 70 75 80

Pro Leu Arg Phe Arg Leu Pro Gly Leu Gly Glu Ala Val Phe Phe Thr
 85 90 95

Arg Gly Leu Lys Tyr Asn Phe Glu Leu Ile Leu Phe Trp Gly Pro Gly
 100 105 110

Ser Leu Phe Leu Asn Glu Trp Ser Leu Lys Ala Glu Tyr Lys Arg Gly
 115 120 125

Gly Gln Arg Leu Glu Leu Ala Gln Arg Leu Ser Asn Arg

PROTEIN SEQUENCES

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<213> Homo sapiens

<400> 209

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20 25

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<211> 66

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<400> 210

Ser Tyr Ala Glu Val Leu Lys Arg Glu Pro Gly Ala Leu Gly Ala Arg
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Cys Trp Ser Leu Tyr Gly Arg Cys Tyr Leu Arg His Phe Asn Glu Leu
20 25 30

Glu His Glu Leu Gln Ser Arg Leu Asn Arg Gly Tyr Lys Pro Ala Ser
35 40 45

Lys Tyr Met Asn Cys Phe Leu Ser Pro Leu Leu Thr Leu Leu Ala Lys
50 55 60

Asn Gly

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<211> 17

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<400> 211

Ala Phe Phe Ala Gly Ser Ile Leu Ala Val Leu Ile Ala Leu Thr Ile
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Tyr

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<210> 213
<211> 19
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<400> 213
Val Leu Thr Thr Val Thr Leu Leu Gly Val Thr Val Thr Val Cys Arg
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Ser Phe Ile

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<211> 414
<212> PRT
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Arg Ser Gln Thr Arg Asp Glu Phe Ala Gln Leu Phe Gln Tyr Lys Ala
35 40 45

Val Phe Ile Leu Glu Glu Leu Leu Ser Pro Ile Val Thr Pro Leu Ile
50 55 60

Leu Ile Phe Cys Leu Arg Pro Arg Ala Leu Glu Ile Ile Asp Phe Phe
65 70 75 80

Arg Asn Phe Thr Val Glu Val Val Gly Val Gly Asp Thr Cys Ser Phe

PDB ID: 1ZC0

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Gly Gln Thr Glu Ala Ser Val Tyr Gln Gln Ala Glu Asp Gly Lys Thr			
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Glu Leu Ser Leu Met His Phe Ala Ile Thr Asn Pro Gly Trp Gln Pro			
130	135		140
Pro Arg Glu Ser Thr Ala Phe Leu Gly Phe Leu Lys Glu Gln Val Gln			
145	150	155	160
Arg Asp Gly Ala Ala Ala Ser Leu Ala Gln Gly Gly Leu Leu Pro Glu			
165	170		175
Asn Ala Leu Phe Thr Ser Ile Gln Ser Leu Gln Ser Glu Ser Glu Pro			
180	185		190
Leu Ser Leu Ile Ala Asn Val Val Ala Gly Ser Ser Cys Arg Gly Pro			
195	200		205
Pro Leu Pro Arg Asp Leu Gln Gly Ser Arg His Arg Ala Glu Val Ala			
210	215		220
Ser Ala Leu Arg Ser Phe Ser Pro Leu Gln Pro Gly Gln Ala Pro Thr			
225	230	235	240
Gly Arg Ala His Ser Thr Met Thr Gly Ser Gly Val Asp Ala Arg Thr			
245	250		255
Ala Ser Ser Gly Ser Ser Val Trp Glu Gly Gln Leu Gln Ser Leu Val			
260	265		270
Leu Ser Glu Tyr Ala Ser Thr Glu Met Ser Leu His Ala Leu Tyr Met			
275	280		285
His Gln Leu His Lys Gln Gln Ala Gln Ala Glu Pro Glu Arg His Val			
290	295		300
Trp His Arg Arg Glu Ser Asp Glu Ser Gly Glu Ser Ala Pro Asp Glu			
305	310	315	320
Gly Gly Glu Gly Ala Arg Ala Pro Gln Ser Ile Pro Arg Ser Ala Ser			
325	330		335
Tyr Pro Cys Ala Ala Pro Arg Pro Gly Ala Pro Glu Thr Thr Ala Leu			

340

345

350

His Gly Gly Phe Gln Arg Arg Tyr Gly Gly Ile Thr Asp Pro Gly Thr
355 360 365

Val Pro Arg Val Pro Ser His Phe Ser Arg Leu Pro Leu Gly Gly Trp
370 375 380

Ala Glu Asp Gly Gln Ser Ala Ser Arg His Pro Glu Pro Val Pro Glu
385 390 395 400

Glu Gly Ser Glu Asp Glu Leu Pro Pro Gln Val His Lys Val
405 410

<210> 215

<211> 2448

<212> DNA

<213> Homo sapiens

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<212> PRT

<213> Homo sapiens

<400> 216

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10

15

Asp Ser Pro Pro Gly Glu Glu Asp Leu Leu Val His Val Ala Glu Gly

20

25

30

Ser Lys Ser Pro Trp His His Ile Glu Asn Leu Asp Leu Phe Phe Ser

35

40

45

Arg Val Tyr Asn Leu His Gln Lys Asn Gly Phe Thr Cys Met Leu Ile

50

55

60

Gly Glu Ile Phe Glu Leu Met Gln Phe Leu Phe Val Val Ala Phe Thr

65

70

75

80

Thr Phe Leu Val Ser Cys Val Asp Tyr Asp Ile Leu Phe Ala Asn Lys

85

90

95

Met Val Asn His Ser Leu His Pro Thr Glu Pro Val Lys Val Thr Leu

100

105

110

Pro Asp Ala Phe Leu Pro Ala Gln Val Cys Ser Ala Arg Ile Gln Glu

115

120

125

Asn Gly Ser Leu Ile Thr Ile Leu Val Ile Ala Gly Val Phe Trp Ile

130

135

140

His Arg Leu Ile Lys Phe Ile Tyr Asn Ile Cys Cys Tyr Trp Glu Ile
145 150 155 160

His Ser Phe Tyr Leu His Ala Leu Arg Ile Pro Met Ser Ala Leu Pro
165 170 175

Tyr Cys Thr Trp Gln Glu Val Gln Ala Arg Ile Val Gln Thr Gln Lys
180 185 190

Glu His Gln Ile Cys Ile His Lys Arg Glu Leu Thr Glu Leu Asp Ile
195 200 205

Tyr His Arg Ile Leu Arg Phe Gln Asn Tyr Met Val Ala Leu Val Asn
210 215 220

Lys Ser Leu Leu Pro Leu Arg Phe Arg Leu Pro Gly Leu Gly Glu Ala
225 230 235 240

Val Phe Phe Thr Arg Gly Leu Lys Tyr Asn Phe Glu Leu Ile Leu Phe
245 250 255

Trp Gly Pro Gly Ser Leu Phe Leu Asn Glu Trp Ser Leu Lys Ala Glu
260 265 270

Tyr Lys Arg Gly Gly Gln Arg Leu Glu Leu Ala Gln Arg Leu Ser Asn
275 280 285

Arg Ile Leu Trp Ile Gly Ile Ala Asn Phe Leu Leu Cys Pro Leu Ile
290 295 300

Leu Ile Trp Gln Ile Leu Tyr Ala Phe Phe Ser Tyr Ala Glu Val Leu
305 310 315 320

Lys Arg Glu Pro Gly Ala Leu Gly Ala Arg Cys Trp Ser Leu Tyr Gly
325 330 335

Arg Cys Tyr Leu Arg His Phe Asn Glu Leu Glu His Glu Leu Gln Ser
340 345 350

Arg Leu Asn Arg Gly Tyr Lys Pro Ala Ser Lys Tyr Met Asn Cys Phe
355 360 365

Leu Ser Pro Leu Leu Thr Leu Leu Ala Lys Asn Gly Ala Phe Phe Ala
370 375 380

Gly Ser Ile Leu Ala Val Leu Ile Ala Leu Thr Ile Tyr Asp Glu Asp
385 390 395 400

EQUATION

Val Leu Ala Val Glu His Val Leu Thr Thr Val Thr Leu Leu Gly Val
405 410 415

Thr Val Thr Val Cys Arg Ser Phe Ile Pro Asp Gln His Met Val Phe
420 425 430

Cys Pro Glu Gln Leu Leu Arg Val Ile Leu Ala His Ile His Tyr Met
435 440 445

Pro Asp His Trp Gln Gly Asn Ala His Arg Ser Gln Thr Arg Asp Glu
450 455 460

Phe Ala Gln Leu Phe Gln Tyr Lys Ala Val Phe Ile Leu Glu Glu Leu
465 470 475 480

Leu Ser Pro Ile Val Thr Pro Leu Ile Leu Ile Phe Cys Leu Arg Pro
485 490 495

Arg Ala Leu Glu Ile Ile Asp Phe Phe Arg Asn Phe Thr Val Glu Val
500 505 510

Val Gly Val Gly Asp Thr Cys Ser Phe Ala Gln Met Asp Val Arg Gln
515 520 525

His Gly His Pro Gln Trp Leu Ser Ala Gly Gln Thr Glu Ala Ser Val
530 535 540

Tyr Gln Gln Ala Glu Asp Gly Lys Thr Glu Leu Ser Leu Met His Phe
545 550 555 560

Ala Ile Thr Asn Pro Gly Trp Gln Pro Pro Arg Glu Ser Thr Ala Phe
565 570 575

Leu Gly Phe Leu Lys Glu Gln Val Gln Arg Asp Gly Ala Ala Ala Ser
580 585 590

Leu Ala Gln Gly Gly Leu Leu Pro Glu Asn Ala Leu Phe Thr Ser Ile
595 600 605

Gln Ser Leu Gln Ser Glu Ser Glu Pro Leu Ser Leu Ile Ala Asn Val
610 615 620

Val Ala Gly Ser Ser Cys Arg Gly Pro Pro Leu Pro Arg Asp Leu Gln
625 630 635 640

Gly Ser Arg Arg Ala His Ser Thr Met Thr Gly Ser Gly Val Asp Ala
645 650 655

PDB ID: 1B6D

Arg Thr Ala Ser Ser Gly Ser Ser Val Trp Glu Gly Gln Leu Gln Ser
660 665 670

Leu Val Leu Ser Glu Tyr Ala Ser Thr Glu Met Ser Leu His Ala Leu
675 680 685

Tyr Met His Gln Leu His Lys Gln Gln Ala Gln Ala Glu Pro Glu Arg
690 695 700

His Val Trp His Arg Arg Glu Ser Asp Glu Ser Gly Glu Ser Ala Pro
705 710 715 720

Asp Glu Gly Gly Glu Gly Ala Arg Ala Pro Gln Ser Ile Pro Arg Ser
725 730 735

Ala Ser Tyr Pro Cys Ala Ala Pro Arg Pro Gly Ala Pro Glu Thr Thr
740 745 750

Ala Leu His Gly Gly Phe Gln Arg Arg Tyr Gly Gly Ile Thr Asp Pro
755 760 765

Gly Thr Val Pro Arg Val Pro Ser His Phe Ser Arg Leu Pro Leu Gly
770 775 780

Gly Trp Ala Glu Asp Gly Gln Ser Ala Ser Arg His Pro Glu Pro Val
785 790 795 800

Pro Glu Glu Gly Ser Glu Asp Glu Leu Pro Pro Gln Val His Lys Val
805 810 815

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Ser Phe Leu Phe Ser Ala Leu Tyr Ala Ala Phe Ile Phe Gly Gly Arg
35 40 45

His Leu Met Asn Lys Arg Ala Lys Phe Glu Leu Arg Lys Pro Leu Val
50 55 60

Leu Trp Ser Leu Thr Leu Ala Val Phe Ser Ile Phe Gly Ala Leu Arg
65 70 75 80

Thr Gly Ala Tyr Met Val Tyr Ile Leu Met Thr Lys Gly Leu Lys Gln
85 90 95

Ser Val Cys Asp Gln Gly Phe Tyr Asn Gly Pro Val Ser Lys Phe Trp
100 105 110

Ala Tyr Ala Phe Val Leu Ser Lys Ala Pro Glu Leu Gly Asp Thr Ile
115 120 125

Phe Ile Ile Leu Arg Lys Gln Lys Leu Ile Phe Leu His Trp Tyr His
130 135 140

His Ile Thr Val Leu Leu Tyr Ser Trp Tyr Ser Tyr Lys Asp Met Val
145 150 155 160

Ala Gly Gly Trp Phe Met Thr Met Asn Tyr Gly Val His Ala Val
165 170 175

Met Tyr Ser Tyr Tyr Ala Leu Arg Ala Ala Gly Phe Arg Val Ser Arg
180 185 190

Lys Phe Ala Met Phe Ile Thr Leu Ser Gln Ile Thr Gln Met Leu Met
195 200 205

Gly Cys Val Val Asn Tyr Leu Val Phe Cys Trp Met Gln His Asp Gln
210 215 220

Cys His Ser His Phe Gln Asn Ile Phe Trp Ser Ser Leu Met Tyr Leu
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Ser Tyr Leu Val Leu Phe Cys His Phe Phe Phe Glu Ala Tyr Ile Gly
245 250 255

Lys Met Arg Lys Thr Thr Lys Ala Glu
260 265

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<400> 224
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Phe Asn Glu Asn Glu Ala Ile Gln Trp Met Gln Glu Asn Trp Lys Lys
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Ser Phe Leu Phe Ser Ala Leu Tyr Ala Ala Phe Ile Phe Gly
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20 25 30

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35 40 45

Lys Gln Ser Val Cys Asp Gln Gly Phe Tyr Asn Gly Pro Val Ser Lys
50 55 60

Phe Trp Ala Tyr Ala Phe Val Leu Ser Lys Ala Pro Glu Leu Gly Asp
65 70 75 80

Thr Ile Phe Ile Ile Leu Arg Lys Gln Lys Leu Ile Phe Leu His Trp
85 90 95

Tyr His His Ile Thr Val Leu Leu Tyr Ser Trp Tyr Ser Tyr Lys Asp
100 105 110

Met Val Ala Gly Gly Trp Phe Met Thr Met Asn Tyr Gly Val His
115 120 125

Ala Val Met Tyr Ser Tyr Tyr Ala Leu Arg Ala Ala Gly Phe Arg Val

130 135 140
Ser Arg Lys Phe Ala Met Phe Ile Thr Leu Ser Gln Ile Thr Gln Met
145 150 155 160

Leu Met Gly Cys Val Val Asn Tyr Leu Val Phe Cys Trp Met Gln His
165 170 175

Asp Gln Cys His Ser His Phe Gln Asn Ile Phe Trp Ser Ser Leu Met
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Tyr Leu Ser Tyr Leu Val Leu Phe Cys His Phe Phe Glu Ala Tyr
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Ile Gly Lys Met Arg Lys Thr Thr Lys Ala Glu
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<400> 228
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Gln Ser Val Cys Asp Gln Gly Phe Tyr Asn Gly Pro Val Ser Lys Phe
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Trp Ala Tyr Ala Phe Val Leu Ser Lys Ala Pro Glu Leu Gly Asp Thr
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Ile Phe Ile Ile Leu Arg Lys Gln Lys
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<212> PRT

<213> Homo sapiens

<400> 229

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Trp

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<213> Homo sapiens

<400> 230

Tyr Ser Tyr Lys Asp Met Val Ala Gly Gly Gly
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<210> 231

<211> 19

<212> PRT

<213> Homo sapiens

<400> 231

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Tyr Ala Leu

<210> 232
<211> 10
<212> PRT
<213> Homo sapiens

<400> 232
Arg Ala Ala Gly Phe Arg Val Ser Arg Lys
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<210> 233
<211> 24
<212> PRT
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<400> 233
Phe Ala Met Phe Ile Thr Leu Ser Gln Ile Thr Gln Met Leu Met Gly
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Cys Val Val Asn Tyr Leu Val Phe
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<212> PRT
<213> Homo sapiens

<400> 235
Ile Phe Trp Ser Ser Leu Met Tyr Leu Ser Tyr Leu Val Leu Phe Cys
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His Phe Phe Phe
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Glu Ala Tyr Ile Gly Lys Met Arg Lys Thr Thr Lys Ala Glu

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<400> 237

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<213> Homo sapiens

<400> 238

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<210> 239

<211> 265

<212> PRT

<213> Mus sp.

<400> 239

Met Asn Met Ser Val Leu Thr Leu Gln Glu Tyr Glu Phe Glu Lys Gln

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Phe Asn Glu Asn Glu Ala Ile Gln Trp Met Gln Glu Asn Trp Lys Lys

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25

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Ser Phe Leu Phe Ser Ala Leu Tyr Ala Ala Phe Ile Phe Gly Gly Arg

DRAFT 2/26/00

35

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His	Leu	Met	Asn	Lys	Arg	Ala	Lys	Phe	Glu	Leu	Arg	Lys	Pro	Leu	Val
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Thr	Gly	Ala	Tyr	Met	Val	Tyr	Ile	Leu	Met	Thr	Lys	Gly	Leu	Lys	Gln
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Ser	Val	Cys	Asp	Gln	Gly	Phe	Tyr	Asn	Gly	Pro	Val	Ser	Lys	Phe	Trp
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															105
Ala	Tyr	Ala	Phe	Val	Leu	Ser	Lys	Ala	Pro	Glu	Leu	Gly	Asp	Thr	Ile
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															120
															125
Phe	Ile	Ile	Leu	Arg	Lys	Gln	Lys	Leu	Ile	Phe	Leu	His	Trp	Tyr	His
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															135
															140
His	Ile	Thr	Val	Leu	Leu	Tyr	Ser	Trp	Tyr	Ser	Tyr	Lys	Asp	Met	Val
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															175
Met	Tyr	Ser	Tyr	Tyr	Ala	Leu	Arg	Ala	Ala	Gly	Phe	Arg	Val	Ser	Arg
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															185
															190
Lys	Phe	Ala	Met	Phe	Ile	Thr	Leu	Ser	Gln	Ile	Thr	Gln	Met	Leu	Met
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															200
															205
Gly	Cys	Val	Val	Asn	Tyr	Leu	Val	Phe	Cys	Trp	Met	Gln	His	Asp	Gln
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															215
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Cys	His	Ser	His	Phe	Gln	Asn	Ile	Phe	Trp	Ser	Ser	Leu	Met	Tyr	Leu
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															230
															235
Ser	Tyr	Leu	Val	Leu	Phe	Cys	His	Phe	Phe	Phe	Glu	Ala	Tyr	Ile	Gly
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<400> 240

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<213> Mus sp.

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<400> 242

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tactcctaca aagacatggt cgctgggggt ggttggttca tgactatgaa ctatggcgtg 240
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tttgcctatgt tcacacaccc ttcccgatgc actcagatgc tgatggctg tgtcattaac 360
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<210> 243

<211> 174

<212> PRT

<213> Mus sp.

<400> 243

Leu Lys Gln Ser Val Cys Asp Gln Ser Phe Tyr Asn Gly Pro Val Ser
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Lys Phe Trp Ala Tyr Ala Phe Val Leu Ser Lys Ala Pro Glu Leu Gly
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Asp Thr Ile Phe Ile Ile Leu Arg Lys Gln Lys Leu Ile Phe Leu His
35 40 45

Trp Tyr His His Ile Thr Val Leu Leu Tyr Ser Trp Tyr Ser Tyr Lys
50 55 60

Asp Met Val Ala Gly Gly Trp Phe Met Thr Met Asn Tyr Gly Val
65 70 75 80

His Ala Val Met Tyr Ser Tyr Ala Leu Arg Ala Ala Gly Phe Arg
85 90 95

Val Ser Arg Lys Phe Ala Met Phe Ile Thr Leu Ser Gln Ile Thr Gln
100 105 110

Met Leu Met Gly Cys Val Ile Asn Tyr Leu Val Phe Asn Trp Met Gln
115 120 125

His Asp Asn Asp Gln Cys Tyr Ser His Phe Gln Asn Ile Phe Trp Ser
130 135 140

Ser Leu Met Tyr Leu Ser Tyr Leu Val Leu Phe Cys His Phe Phe Phe
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Glu Ala Tyr Ile Gly Lys Val Lys Lys Ala Thr Lys Ala Glu
165 170

<210> 244
<211> 49
<212> PRT
<213> Mus sp.

<400> 244
Leu Lys Gln Ser Val Cys Asp Gln Ser Phe Tyr Asn Gly Pro Val Ser
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Lys Phe Trp Ala Tyr Ala Phe Val Leu Ser Lys Ala Pro Glu Leu Gly
20 25 30

Asp Thr Ile Phe Ile Ile Leu Arg Lys Gln Lys Leu Ile Phe Leu His
35 40 45

Trp

<210> 245
<211> 17
<212> PRT
<213> Mus sp.

<400> 245
Tyr His His Ile Thr Val Leu Leu Tyr Ser Trp Tyr Ser Tyr Lys Asp
1 5 10 15

Met

<210> 246
<211> 11
<212> PRT
<213> Mus sp.

<400> 246
Val Ala Gly Gly Trp Phe Met Thr Met Asn
1 5 10

<210> 247

<211> 19
<212> PRT
<213> Mus sp.

<400> 247
Tyr Gly Val His Ala Val Met Tyr Ser Tyr Tyr Ala Leu Arg Ala Ala
1 5 10 15
Gly Phe Arg

<210> 248
<211> 10
<212> PRT
<213> Mus sp.

<400> 248
Val Ser Arg Lys Phe Ala Met Phe Ile Thr
1 5 10

<210> 249
<211> 24
<212> PRT
<213> Mus sp.

<400> 249
Leu Ser Gln Ile Thr Gln Met Leu Met Gly Cys Val Ile Asn Tyr Leu
1 5 10 15
Val Phe Asn Trp Met Gln His Asp
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<211> 16
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<213> Mus sp.

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<213> Rattus sp.

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cccacgcgca tgcagacaca cccacctaca cactatctgc agatgaccag tgtccatgc 900
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<211> 432

<212> DNA

<213> Rattus sp.

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<210> 253

<211> 144

<212> PRT

<213> Rattus sp.

<400> 253

Leu Gly Asp Thr Ile Phe Ile Ile Leu Arg Lys Gln Lys Leu Ile Phe

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Leu His Trp Tyr His His Ile Thr Val Leu Leu Tyr Ser Trp Tyr Ser

PROTEIN SEQUENCES

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Tyr Lys Asp Met Val Ala Gly Gly Gly Trp Phe Met Thr Met Asn Tyr
35 40 45

Gly Val His Ala Val Met Tyr Ser Tyr Tyr Ala Leu Arg Ala Ala Gly
50 55 60

Phe Arg Val Ser Arg Lys Phe Ala Met Phe Ile Thr Leu Ser Gln Ile
65 70 75 80

Thr Gln Met Leu Met Gly Cys Val Ile Asn Tyr Leu Val Phe Asn Trp
85 90 95

Met Gln His Asp Asn Asp Gln Cys Tyr Ser His Phe Gln Asn Ile Phe
100 105 110

Trp Ser Ser Leu Met Tyr Leu Ser Tyr Leu Leu Phe Cys His Phe
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Phe Phe Glu Ala Tyr Ile Gly Lys Val Lys Lys Ala Thr Lys Ala Glu
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<213> Homo sapiens

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ପ୍ରକାଶକ ମେଳି

<210> 272

<211> 1365

<212> DNA

<213> Homo sapiens

<400> 272

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gccgtgcgcg actttgcgcg cgagtacgtt tgctggcct tcaaggtacc cgcgtccgc 780
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<210> 273

<211> 455

<212> PRT

<213> Homo sapiens

<400> 273

Met Thr Trp Leu Val Leu Leu Gly Thr Leu Leu Cys Met Leu Arg Val
1 5 10 15

Gly Leu Gly Thr Pro Asp Ser Glu Gly Phe Pro Pro Arg Ala Leu His
20 25 30

Asn Cys Pro Tyr Lys Cys Ile Cys Ala Ala Asp Leu Leu Ser Cys Thr
35 40 45

Gly Leu Gly Leu Gln Asp Val Pro Ala Glu Leu Pro Ala Ala Thr Ala
50 55 60

Asp Leu Asp Leu Ser His Asn Ala Leu Gln Arg Leu Arg Pro Gly Trp
65 70 75 80

Leu Ala Pro Leu Phe Gln Leu Arg Ala Leu His Leu Asp His Asn Glu
85 90 95

Leu Asp Ala Leu Gly Arg Gly Val Phe Val Asn Ala Ser Gly Leu Arg
100 105 110

Leu Leu Asp Leu Ser Ser Asn Thr Leu Arg Ala Leu Gly Arg His Asp
115 120 125

Leu Asp Gly Leu Gly Ala Leu Glu Lys Leu Leu Leu Phe Asn Asn Arg
130 135 140

Leu Val His Leu Asp Glu His Ala Phe His Gly Leu Arg Ala Leu Ser
145 150 155 160

His Leu Tyr Leu Gly Cys Asn Glu Leu Ala Ser Phe Ser Phe Asp His
165 170 175

Leu His Gly Leu Ser Ala Thr His Leu Leu Thr Leu Asp Leu Ser Ser

180 185 190

Asn Arg Leu Gly His Ile Ser Val Pro Glu Leu Ala Ala Leu Pro Ala
195 200 205

Phe Leu Lys Asn Gly Leu Tyr Leu His Asn Asn Pro Leu Pro Cys Asp
210 215 220

Cys Arg Leu Tyr His Leu Leu Gln Arg Trp His Gln Arg Gly Leu Ser
225 230 235 240

Ala Val Arg Asp Phe Ala Arg Glu Tyr Val Cys Leu Ala Phe Lys Val
245 250 255

Pro Ala Ser Arg Val Arg Phe Phe Gln His Ser Arg Val Phe Glu Asn
260 265 270

Cys Ser Ser Ala Pro Ala Leu Gly Leu Lys Arg Pro Glu Glu His Leu
275 280 285

Tyr Ala Leu Val Gly Arg Ser Leu Arg Leu Tyr Cys Asn Thr Ser Val
290 295 300

Pro Ala Met Arg Ile Ala Trp Val Ser Pro Gln Gln Glu Leu Leu Arg
305 310 315 320

Ala Pro Gly Ser Arg Asp Gly Ser Ile Ala Val Leu Ala Asp Gly Ser
325 330 335

Leu Ala Ile Gly Asn Val Gln Glu Gln His Ala Gly Leu Phe Val Cys
340 345 350

Leu Ala Thr Gly Pro Arg Leu His His Asn Gln Thr His Glu Tyr Asn
355 360 365

Val Ser Val His Phe Pro Arg Pro Glu Pro Glu Ala Phe Asn Thr Gly
370 375 380

Phe Thr Thr Leu Leu Gly Cys Ala Val Gly Leu Val Leu Val Leu Leu
385 390 395 400

Tyr Leu Phe Ala Pro Pro Cys Arg Cys Cys Arg Arg Ala Cys Pro Leu
405 410 415

Pro Pro Leu Ala Pro Asn Thr Gln Pro Ala Pro Arg Ala Glu Pro His
420 425 430

Lys Ser Ser Val Leu Ser Thr Thr Pro Pro Asp Ala Pro Ser Pro Gln

TOP SECRET//NOFORN

435

440

445

Gly Gln Ala Ser Thr Ser Thr
450 455

<210> 274

<211> 20

<212> PRT

<213> Homo sapiens

<400> 274

Met Thr Trp Leu Val Leu Leu Gly Thr Leu Leu Cys Met Leu Arg Val
1 5 10 15

Gly Leu Gly Thr
20

<210> 275

<211> 435

<212> PRT

<213> Homo sapiens

<400> 275

Pro Asp Ser Glu Gly Phe Pro Pro Arg Ala Leu His Asn Cys Pro Tyr
1 5 10 15

Lys Cys Ile Cys Ala Ala Asp Leu Leu Ser Cys Thr Gly Leu Gly Leu
20 25 30

Gln Asp Val Pro Ala Glu Leu Pro Ala Ala Thr Ala Asp Leu Asp Leu
35 40 45

Ser His Asn Ala Leu Gln Arg Leu Arg Pro Gly Trp Leu Ala Pro Leu
50 55 60

Phe Gln Leu Arg Ala Leu His Leu Asp His Asn Glu Leu Asp Ala Leu
65 70 75 80

Gly Arg Gly Val Phe Val Asn Ala Ser Gly Leu Arg Leu Leu Asp Leu
85 90 95

Ser Ser Asn Thr Leu Arg Ala Leu Gly Arg His Asp Leu Asp Gly Leu
100 105 110

Gly Ala Leu Glu Lys Leu Leu Leu Phe Asn Asn Arg Leu Val His Leu
115 120 125

EQUINE SEROTONIN

Asp Glu His Ala Phe His Gly Leu Arg Ala Leu Ser His Leu Tyr Leu
130 135 140

Gly Cys Asn Glu Leu Ala Ser Phe Ser Phe Asp His Leu His Gly Leu
145 150 155 160

Ser Ala Thr His Leu Leu Thr Leu Asp Leu Ser Ser Asn Arg Leu Gly
165 170 175

His Ile Ser Val Pro Glu Leu Ala Ala Leu Pro Ala Phe Leu Lys Asn
180 185 190

Gly Leu Tyr Leu His Asn Asn Pro Leu Pro Cys Asp Cys Arg Leu Tyr
195 200 205

His Leu Leu Gln Arg Trp His Gln Arg Gly Leu Ser Ala Val Arg Asp
210 215 220

Phe Ala Arg Glu Tyr Val Cys Leu Ala Phe Lys Val Pro Ala Ser Arg
225 230 235 240

Val Arg Phe Phe Gln His Ser Arg Val Phe Glu Asn Cys Ser Ser Ala
245 250 255

Pro Ala Leu Gly Leu Lys Arg Pro Glu Glu His Leu Tyr Ala Leu Val
260 265 270

Gly Arg Ser Leu Arg Leu Tyr Cys Asn Thr Ser Val Pro Ala Met Arg
275 280 285

Ile Ala Trp Val Ser Pro Gln Gln Glu Leu Leu Arg Ala Pro Gly Ser
290 295 300

Arg Asp Gly Ser Ile Ala Val Leu Ala Asp Gly Ser Leu Ala Ile Gly
305 310 315 320

Asn Val Gln Glu Gln His Ala Gly Leu Phe Val Cys Leu Ala Thr Gly
325 330 335

Pro Arg Leu His His Asn Gln Thr His Glu Tyr Asn Val Ser Val His
340 345 350

Phe Pro Arg Pro Glu Pro Glu Ala Phe Asn Thr Gly Phe Thr Thr Leu
355 360 365

Leu Gly Cys Ala Val Gly Leu Val Leu Val Leu Leu Tyr Leu Phe Ala
370 375 380

Pro Pro Cys Arg Cys Cys Arg Arg Ala Cys Pro Leu Pro Pro Leu Ala
385 390 395 400

Pro Asn Thr Gln Pro Ala Pro Arg Ala Glu Pro His Lys Ser Ser Val
405 410 415

Leu Ser Thr Thr Pro Pro Asp Ala Pro Ser Pro Gln Gly Gln Ala Ser
420 425 430

Thr Ser Thr
435

<210> 276

<211> 363

<212> PRT

<213> Homo sapiens

<400> 276

Pro Asp Ser Glu Gly Phe Pro Pro Arg Ala Leu His Asn Cys Pro Tyr
1 5 10 15

Lys Cys Ile Cys Ala Ala Asp Leu Leu Ser Cys Thr Gly Leu Gly Leu
20 25 30

Gln Asp Val Pro Ala Glu Leu Pro Ala Ala Thr Ala Asp Leu Asp Leu
35 40 45

Ser His Asn Ala Leu Gln Arg Leu Arg Pro Gly Trp Leu Ala Pro Leu
50 55 60

Phe Gln Leu Arg Ala Leu His Leu Asp His Asn Glu Leu Asp Ala Leu
65 70 75 80

Gly Arg Gly Val Phe Val Asn Ala Ser Gly Leu Arg Leu Leu Asp Leu
85 90 95

Ser Ser Asn Thr Leu Arg Ala Leu Gly Arg His Asp Leu Asp Gly Leu
100 105 110

Gly Ala Leu Glu Lys Leu Leu Leu Phe Asn Asn Arg Leu Val His Leu
115 120 125

Asp Glu His Ala Phe His Gly Leu Arg Ala Leu Ser His Leu Tyr Leu
130 135 140

Gly Cys Asn Glu Leu Ala Ser Phe Ser Phe Asp His Leu His Gly Leu

200 190 180 170 160 150 140

145	150	155	160
Ser Ala Thr His Leu Leu Thr Leu Asp Leu Ser Ser Asn Arg Leu Gly			
165	170	175	
His Ile Ser Val Pro Glu Leu Ala Ala Leu Pro Ala Phe Leu Lys Asn			
180	185	190	
Gly Leu Tyr Leu His Asn Asn Pro Leu Pro Cys Asp Cys Arg Leu Tyr			
195	200	205	
His Leu Leu Gln Arg Trp His Gln Arg Gly Leu Ser Ala Val Arg Asp			
210	215	220	
Phe Ala Arg Glu Tyr Val Cys Leu Ala Phe Lys Val Pro Ala Ser Arg			
225	230	235	240
Val Arg Phe Phe Gln His Ser Arg Val Phe Glu Asn Cys Ser Ser Ala			
245	250	255	
Pro Ala Leu Gly Leu Lys Arg Pro Glu Glu His Leu Tyr Ala Leu Val			
260	265	270	
Gly Arg Ser Leu Arg Leu Tyr Cys Asn Thr Ser Val Pro Ala Met Arg			
275	280	285	
Ile Ala Trp Val Ser Pro Gln Gln Glu Leu Leu Arg Ala Pro Gly Ser			
290	295	300	
Arg Asp Gly Ser Ile Ala Val Leu Ala Asp Gly Ser Leu Ala Ile Gly			
305	310	315	320
Asn Val Gln Glu Gln His Ala Gly Leu Phe Val Cys Leu Ala Thr Gly			
325	330	335	
Pro Arg Leu His His Asn Gln Thr His Glu Tyr Asn Val Ser Val His			
340	345	350	
Phe Pro Arg Pro Glu Pro Glu Ala Phe Asn Thr			
355	360		

<210> 277

<211> 20

<212> PRT

<213> Homo sapiens

<400> 277

Gly Phe Thr Thr Leu Leu Gly Cys Ala Val Gly Leu Val Leu Val Leu
1 5 10 15

Leu Tyr Leu Phe
20

<210> 278

<211> 52

<212> PRT

<213> Homo sapiens

<400> 278

Ala Pro Pro Cys Arg Cys Cys Arg Arg Ala Cys Pro Leu Pro Pro Leu
1 5 10 15

Ala Pro Asn Thr Gln Pro Ala Pro Arg Ala Glu Pro His Lys Ser Ser
20 25 30

Val Leu Ser Thr Thr Pro Pro Asp Ala Pro Ser Pro Gln Gly Gln Ala
35 40 45

Ser Thr Ser Thr
50

<210> 279

<211> 1518

<212> DNA

<213> Homo sapiens

<400> 279

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gcggacaatt tcatggccga gggctgtgga gggagcaagg agcacagctt ccagcatccc 180
ttccctccagg cagtggcat gttcctggga gaatttcct gcctggctgc cttctacctc 240
ctccgatgca gagctgcagg gcaatcagac tccagcgttag acccccagca gcccttcaac 300
cctcttcttt tcctgcccccc agcgctctgt gacatgacag ggaccagcct catgtatgtg 360
gctctgaaca tgaccagtgc ctccagcttc cagatgctgc ggggtgcagt gatcatattc 420
actggcctgt tctcggtgcc ctccctggc cgaggagctgg tgctgagcca gtggctggc 480
atcctagcca ccatcgcggg gctgggtggc gtgggcctgg ctgacctcct gagcaagcac 540
gacagtca cacaagtcag cgaagtgate acaggggacc ttttgatcat catggcccag 600
atcatcggtt ccattccagat ggtgcttagag gagaagttcg tctacaaaca caatgtgcac 660
ccactgcggg cagttggcac tgagggcttc tttggcttg tgatcctctc cctgctgctg 720
gtgcccattgt actacatccc cggccggctcc ttcaagcggaa accctcgatgg gacactggag 780
gatgcattgg acgccttctg ccaggtgggc cagcagccgc tcattgccgt ggcactgctg 840
ggcaacatca gcagcattgc ttcttcaac ttgcgaggca tcagcgtcac caaggaactg 900
agcgcacca cccgcatggt gttggacagc ttgcgcaccc ttgtcatctg ggcactgagc 960

ctggcactgg gctgggaggc cttccatgca ctgcagatcc ttggcttccct cataactcctt 1020
ataggcactg ccctctacaa tgggctacac cgccgcgtgc tggccgcct gtccaggggc 1080
cggccccctgg cagaggagag cgagcaggag agactgctgg gtggcacccg cactcccata 1140
aatgatgccca gctgagggttc cctggaggct tctactgccca cccgggtgtct ccttctccct 1200
gagactgagg ccacacaggc tggggccccc cgaatgcctt atccccaaagg cctcaccctg 1260
tccccctccct gcagaacccc cagggcagct gctgccacag aagataacaa caccaagtc 1320
ctcttttctt cactaccacc tgcagggtgg tgtaaaaaaa ccccccacaag cctgagtgca 1380
gtggcagacc tcagctctt ggaccctcc tacagacta gagctaaatc atgaagttga 1440
atttaggaa tttaccaccg tagtgtatct gaatcataaa ctagattatc ataaaaaaaaa 1500
aaaaaaaaagg gcggccgc 1518

<210> 280
<211> 1113
<212> DNA
<213> Homo sapiens

<400> 280
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aacacgctct cggcaaaatg ggcggacaat ttcatggccg agggctgtgg agggagcaag 120
gagcacagct tccagcatcc cttccctccag gcagtgccca tggccctggg agaattctcc 180
tgcctggctg ctttctaccc cttcccgatgc agagctgcag ggcaatcaga ctccagcgta 240
gaccccccagc agcccttcaa cccttttctt ttcctgcccc cagcgctctg tgacatgaca 300
gggaccagcc tcatgtatgt ggctctgaac atgaccagtg cctccagctt ccagatgctg 360
cgggggtgcag tgatcatatt cactggcctg ttctcggtgg cttccctggg ccggaggctg 420
gtgctgagcc agtggctggg catcctagcc accatcgcgg ggctgggtgt cgtgggcctg 480
gctgacactcc tgagcaagca cgacagtca cacaagctca gcgaagtgtat cacaggggac 540
ctgttgcata tcatggccca gatcatcggtt gccatccaga tggtgctaga ggagaagttc 600
gtctacaaac acaatgtca cccactgcgg gcagttggca ctgaggccct cttggcttt 660
gtgatcctct ccctgctgct ggtgcccatt tactacatcc cccgggctc cttcagcgaa 720
aaccctcggtg ggacactgga ggtgcattt gacgccttctt gccaggtggg ccagcagccg 780
ctcattgccc tggcactgct gggcaacatc agcagcattt ctttcttcaa cttcgcaggc 840
atcagcgtca ccaaggaact gagcgcacc acccgcatgg tggcgcacc 900
gttgtcatct gggcaactgag cctggcactg ggctgggagg cttccatgc actgcagatc 960
cttggcttcc tcataactcct tataggcact gccccttaca atgggctaca ccgtccgcgtg 1020
ctggggccgc tggccagggg ccggccccctg gcagaggaga ggcggcaggaa gagactgctg 1080
ggtggcaccgc gactcccat caatgatgcc agc 1113

<210> 281
<211> 371
<212> PRT
<213> Homo sapiens

<400> 281
Met Ala Trp Thr Lys Tyr Gln Leu Phe Leu Ala Gly Leu Met Leu Val
1 5 10 15

SEQUENCE

Thr Gly Ser Ile Asn Thr Leu Ser Ala Lys Trp Ala Asp Asn Phe Met
20 25 30

Ala Glu Gly Cys Gly Gly Ser Lys Glu His Ser Phe Gln His Pro Phe
35 40 45

Leu Gln Ala Val Gly Met Phe Leu Gly Glu Phe Ser Cys Leu Ala Ala
50 55 60

Phe Tyr Leu Leu Arg Cys Arg Ala Ala Gly Gln Ser Asp Ser Ser Val
65 70 75 80

Asp Pro Gln Gln Pro Phe Asn Pro Leu Leu Phe Leu Pro Pro Ala Leu
85 90 95

Cys Asp Met Thr Gly Thr Ser Leu Met Tyr Val Ala Leu Asn Met Thr
100 105 110

Ser Ala Ser Ser Phe Gln Met Leu Arg Gly Ala Val Ile Ile Phe Thr
115 120 125

Gly Leu Phe Ser Val Ala Phe Leu Gly Arg Arg Leu Val Leu Ser Gln
130 135 140

Trp Leu Gly Ile Leu Ala Thr Ile Ala Gly Leu Val Val Val Gly Leu
145 150 155 160

Ala Asp Leu Leu Ser Lys His Asp Ser Gln His Lys Leu Ser Glu Val
165 170 175

Ile Thr Gly Asp Leu Leu Ile Ile Met Ala Gln Ile Ile Val Ala Ile
180 185 190

Gln Met Val Leu Glu Glu Lys Phe Val Tyr Lys His Asn Val His Pro
195 200 205

Leu Arg Ala Val Gly Thr Glu Gly Leu Phe Gly Phe Val Ile Leu Ser
210 215 220

Leu Leu Leu Val Pro Met Tyr Tyr Ile Pro Ala Gly Ser Phe Ser Gly
225 230 235 240

Asn Pro Arg Gly Thr Leu Glu Asp Ala Leu Asp Ala Phe Cys Gln Val
245 250 255

Gly Gln Gln Pro Leu Ile Ala Val Ala Leu Leu Gly Asn Ile Ser Ser
260 265 270

Ile Ala Phe Phe Asn Phe Ala Gly Ile Ser Val Thr Lys Glu Leu Ser
275 280 285

Ala Thr Thr Arg Met Val Leu Asp Ser Leu Arg Thr Val Val Ile Trp
290 295 300

Ala Leu Ser Leu Ala Leu Gly Trp Glu Ala Phe His Ala Leu Gln Ile
305 310 315 320

Leu Gly Phe Leu Ile Leu Leu Ile Gly Thr Ala Leu Tyr Asn Gly Leu
325 330 335

His Arg Pro Leu Leu Gly Arg Leu Ser Arg Gly Arg Pro Leu Ala Glu
340 345 350

Glu Ser Glu Gln Glu Arg Leu Leu Gly Gly Thr Arg Thr Pro Ile Asn
355 360 365

Asp Ala Ser
370

<210> 282

<211> 18

<212> PRT

<213> Homo sapiens

<400> 282

Met Ala Trp Thr Lys Tyr Gln Leu Phe Leu Ala Gly Leu Met Leu Val
1 5 10 15

Thr Gly

<210> 283

<211> 353

<212> PRT

<213> Homo sapiens

<400> 283

Ser Ile Asn Thr Leu Ser Ala Lys Trp Ala Asp Asn Phe Met Ala Glu
1 5 10 15

Gly Cys Gly Gly Ser Lys Glu His Ser Phe Gln His Pro Phe Leu Gln
20 25 30

Ala Val Gly Met Phe Leu Gly Glu Phe Ser Cys Leu Ala Ala Phe Tyr

35	40	45
Leu Leu Arg Cys Arg Ala Ala Gly Gln Ser Asp Ser Ser Val Asp Pro		
50	55	60
Gln Gln Pro Phe Asn Pro Leu Leu Phe Leu Pro Pro Ala Leu Cys Asp		
65	70	75
Met Thr Gly Thr Ser Leu Met Tyr Val Ala Leu Asn Met Thr Ser Ala		
85	90	95
Ser Ser Phe Gln Met Leu Arg Gly Ala Val Ile Ile Phe Thr Gly Leu		
100	105	110
Phe Ser Val Ala Phe Leu Gly Arg Arg Leu Val Leu Ser Gln Trp Leu		
115	120	125
Gly Ile Leu Ala Thr Ile Ala Gly Leu Val Val Val Gly Leu Ala Asp		
130	135	140
Leu Leu Ser Lys His Asp Ser Gln His Lys Leu Ser Glu Val Ile Thr		
145	150	155
160		
Gly Asp Leu Leu Ile Ile Met Ala Gln Ile Ile Val Ala Ile Gln Met		
165	170	175
Val Leu Glu Glu Lys Phe Val Tyr Lys His Asn Val His Pro Leu Arg		
180	185	190
Ala Val Gly Thr Glu Gly Leu Phe Gly Phe Val Ile Leu Ser Leu Leu		
195	200	205
Leu Val Pro Met Tyr Tyr Ile Pro Ala Gly Ser Phe Ser Gly Asn Pro		
210	215	220
Arg Gly Thr Leu Glu Asp Ala Leu Asp Ala Phe Cys Gln Val Gly Gln		
225	230	235
240		
Gln Pro Leu Ile Ala Val Ala Leu Leu Gly Asn Ile Ser Ser Ile Ala		
245	250	255
Phe Phe Asn Phe Ala Gly Ile Ser Val Thr Lys Glu Leu Ser Ala Thr		
260	265	270
Thr Arg Met Val Leu Asp Ser Leu Arg Thr Val Val Ile Trp Ala Leu		
275	280	285
Ser Leu Ala Leu Gly Trp Glu Ala Phe His Ala Leu Gln Ile Leu Gly		

290 295 300

Phe Leu Ile Leu Leu Ile Gly Thr Ala Leu Tyr Asn Gly Leu His Arg
305 310 315 320

Pro Leu Leu Gly Arg Leu Ser Arg Gly Arg Pro Leu Ala Glu Glu Ser
325 330 335

Glu Gln Glu Arg Leu Leu Gly Gly Thr Arg Thr Pro Ile Asn Asp Ala
340 345 350

Ser

<210> 284

<211> 29

<212> PRT

<213> Homo sapiens

<400> 284

Ser Ile Asn Thr Leu Ser Ala Lys Trp Ala Asp Asn Phe Met Ala Glu
1 5 10 15

Gly Cys Gly Gly Ser Lys Glu His Ser Phe Gln His Pro
20 25

<210> 285

<211> 9

<212> PRT

<213> Homo sapiens

<400> 285

Asn Met Thr Ser Ala Ser Ser Phe Gln

1 5

<210> 286

<211> 14

<212> PRT

<213> Homo sapiens

<400> 286

Asp Leu Leu Ser Lys His Asp Ser Gln His Lys Leu Ser Glu

1 5 10

<210> 287
<211> 27
<212> PRT
<213> Homo sapiens

<400> 287
Pro Ala Gly Ser Phe Ser Gly Asn Pro Arg Gly Thr Leu Glu Asp Ala
1 5 10 15

Leu Asp Ala Phe Cys Gln Val Gly Gln Gln Pro
20 25

<210> 288
<211> 7
<212> PRT
<213> Homo sapiens

<400> 288
Glu Ala Phe His Ala Leu Gln
1 5

<210> 289
<211> 21
<212> PRT
<213> Homo sapiens

<400> 289
Phe Leu Gln Ala Val Gly Met Phe Leu Gly Glu Phe Ser Cys Leu Ala
1 5 10 15

Ala Phe Tyr Leu Leu
20

<210> 290
<211> 21
<212> PRT
<213> Homo sapiens

<400> 290
Leu Leu Phe Leu Pro Pro Ala Leu Cys Asp Met Thr Gly Thr Ser Leu
1 5 10 15

Met Tyr Val Ala Leu
20

<210> 291
<211> 19
<212> PRT
<213> Homo sapiens

<400> 291
Met Leu Arg Gly Ala Val Ile Ile Phe Thr Gly Leu Phe Ser Val Ala
1 5 10 15

Phe Leu Gly

<210> 292
<211> 17
<212> PRT
<213> Homo sapiens

<400> 292
Trp Leu Gly Ile Leu Ala Thr Ile Ala Gly Leu Val Val Val Gly Leu
1 5 10 15

Ala

<210> 293
<211> 17
<212> PRT
<213> Homo sapiens

<400> 293
Val Ile Thr Gly Asp Leu Leu Ile Ile Met Ala Gln Ile Ile Val Ala
1 5 10 15

Ile

<210> 294
<211> 18
<212> PRT
<213> Homo sapiens

<400> 294
Gly Leu Phe Gly Phe Val Ile Leu Ser Leu Leu Leu Val Pro Met Tyr
1 5 10 15

Tyr Ile

<210> 295

<211> 23

<212> PRT

<213> Homo sapiens

<400> 295

Leu Ile Ala Val Ala Leu Leu Gly Asn Ile Ser Ser Ile Ala Phe Phe
1 5 10 15

Asn Phe Ala Gly Ile Ser Val
20

<210> 296

<211> 20

<212> PRT

<213> Homo sapiens

<400> 296

Met Val Leu Asp Ser Leu Arg Thr Val Val Ile Trp Ala Leu Ser Leu
1 5 10 15

Ala Leu Gly Trp
20

<210> 297

<211> 17

<212> PRT

<213> Homo sapiens

<400> 297

Ile Leu Gly Phe Leu Ile Leu Leu Ile Gly Thr Ala Leu Tyr Asn Gly
1 5 10 15

Leu

<210> 298

<211> 20

<212> PRT

<213> Homo sapiens

EQUATION

<400> 298

Arg Cys Arg Ala Ala Gly Gln Ser Asp Ser Ser Val Asp Pro Gln Gln
1 5 10 15

Pro Phe Asn Pro
20

<210> 299

<211> 7

<212> PRT

<213> Homo sapiens

<400> 299

Arg Arg Leu Val Leu Ser Gln
1 5

<210> 300

<211> 24

<212> PRT

<213> Homo sapiens

<400> 300

0 Gln Met Val Leu Glu Glu Lys Phe Val Tyr Lys His Asn Val His
11 e a e 51 l y h a 10y y i s a 15i

<210> 301

<211> 9

<212> PRT

<213> Homo sapiens

<400> 301

Thr Lys Glu Leu Ser Ala Thr Thr Arg
1 5

<210> 302

<211> 35

<212> PRT

<213> Homo sapiens

<400> 302

His Arg Pro Leu Leu Gly Arg Leu Ser Arg Gly Arg Pro Leu Ala Glu
1 5 10 15

Glu Ser Glu Gln Glu Arg Leu Leu Gly Gly Thr Arg Thr Pro Ile Asn
20 25 30

Asp Ala Ser
35

<210> 303
<211> 2811
<212> DNA
<213> Homo sapiens

<400> 303
gtcgacccac gcgtccgcgg gacagctggc ctgaagctca gagccggggc gtgcgccatg 60
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<212> DNA
<213> Homo sapiens

<400> 304
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<212> PRT
<213> Homo sapiens

<400> 305
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20 25 30

Val Ser Ser Gly Glu Leu Ala Thr Val Val Arg Arg Phe Ser Gln Thr

PDB ID: 1B2D

35

40

45

Gly Ile Gln Asp Phe Leu Thr Leu Thr Leu Thr Glu Pro Thr Gly Leu
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Leu Tyr Val Gly Ala Arg Glu Ala Leu Phe Ala Phe Ser Met Glu Ala
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Leu Glu Leu Gln Gly Ala Ile Ser Trp Glu Ala Pro Val Glu Lys Lys
85 90 95

Thr Glu Cys Ile Gln Lys Gly Lys Asn Asn Gln Thr Glu Cys Phe Asn
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Phe Ile Arg Phe Leu Gln Pro Tyr Asn Ala Ser His Leu Tyr Val Cys
115 120 125

Gly Thr Tyr Ala Phe Gln Pro Lys Cys Thr Tyr Val Val Ser Ala Ala
130 135 140

Leu Leu Pro Arg Cys Pro Gln Pro Pro Ala Leu Leu Thr Leu Leu Trp
145 150 155 160

Thr Arg Gly Cys Gly Pro Gln Ser Pro Ala Leu Lys His Leu Leu Ile
165 170 175

Thr Ser Leu Ser Val Leu Arg Thr Cys Ser Pro Ser Leu Trp Ser Met
180 185 190

Glu Ser Leu Lys Met Gly Arg Ala Ser Val Pro Met Thr Gln Leu Arg
195 200 205

Ala Met Leu Ala Phe Leu Trp Met Val Ser Cys Thr Arg Pro His Ser
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Thr Thr Ser Trp Ala Arg Asn Pro Leu Ser Cys Val Thr Trp Gly Pro
225 230 235 240

Thr Thr Pro

<210> 306

<211> 20

<212> PRT

<213> Homo sapiens

<400> 306

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Leu Gly Ile Gly
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<210> 307

<211> 223

<212> PRT

<213> Homo sapiens

<400> 307

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Glu Leu Ala Thr Val Val Arg Arg Phe Ser Gln Thr Gly Ile Gln Asp
20 25 30

Phe Leu Thr Leu Thr Leu Thr Glu Pro Thr Gly Leu Leu Tyr Val Gly
35 40 45

Ala Arg Glu Ala Leu Phe Ala Phe Ser Met Glu Ala Leu Glu Leu Gln
50 55 60

Gly Ala Ile Ser Trp Glu Ala Pro Val Glu Lys Lys Thr Glu Cys Ile
65 70 75 80

Gln Lys Gly Lys Asn Asn Gln Thr Glu Cys Phe Asn Phe Ile Arg Phe
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Leu Gln Pro Tyr Asn Ala Ser His Leu Tyr Val Cys Gly Thr Tyr Ala
100 105 110

Phe Gln Pro Lys Cys Thr Tyr Val Val Ser Ala Ala Leu Leu Pro Arg
115 120 125

Cys Pro Gln Pro Pro Ala Leu Leu Thr Leu Leu Trp Thr Arg Gly Cys
130 135 140

Gly Pro Gln Ser Pro Ala Leu Lys His Leu Leu Ile Thr Ser Leu Ser
145 150 155 160

Val Leu Arg Thr Cys Ser Pro Ser Leu Trp Ser Met Glu Ser Leu Lys
165 170 175

Met Gly Arg Ala Ser Val Pro Met Thr Gln Leu Arg Ala Met Leu Ala
180 185 190

Phe Leu Trp Met Val Ser Cys Thr Arg Pro His Ser Thr Thr Ser Trp
195 200 205

Ala Arg Asn Pro Leu Ser Cys Val Thr Trp Gly Pro Thr Thr Pro
210 215 220

<210> 308
<211> 2498
<212> DNA
<213> Homo sapiens

<400> 308

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<211> 678
<212> DNA
<213> Homo sapiens

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<211> 226
<212> PRT
<213> Homo sapiens

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Gly Phe Pro His Cys Ala Arg Gly Pro Lys Ala Ser Lys His Ala Gly
20 25 30

Glu Glu Val Phe Thr Ser Lys Glu Glu Ala Asn Phe Phe Ile His Arg
35 40 45

Arg Leu Leu Tyr Asn Arg Phe Asp Leu Glu Leu Phe Thr Pro Gly Asn
50 55 60

PRT-DATASEQ

Leu Glu Arg Glu Cys Asn Glu Glu Leu Cys Asn Tyr Glu Glu Ala Arg
65 70 75 80

Glu Ile Phe Val Asp Glu Asp Lys Thr Ile Ala Phe Trp Gin Glu Tyr
85 90 95

Ser Ala Lys Gly Pro Thr Thr Lys Ser Asp Gly Asn Arg Glu Lys Ile
100 105 110

Asp Val Met Gly Leu Leu Thr Gly Leu Ile Ala Ala Gly Val Phe Leu
115 120 125

Val Ile Phe Gly Leu Leu Gly Tyr Tyr Leu Cys Ile Thr Lys Cys Asn
130 135 140

Arg Leu Gln His Pro Cys Ser Ser Ala Val Tyr Glu Arg Gly Arg His
145 150 155 160

Thr Pro Ser Ile Ile Phe Arg Arg Pro Glu Glu Ala Ala Leu Ser Pro
165 170 175

Leu Pro Pro Ser Val Glu Asp Ala Gly Leu Pro Ser Tyr Glu Gln Ala
180 185 190

Val Ala Leu Thr Arg Lys His Ser Val Ser Pro Pro Pro Pro Tyr Pro
195 200 205

Gly His Thr Lys Gly Phe Arg Val Phe Lys Lys Ser Met Ser Leu Pro
210 215 220

Ser His
225

<210> 311
<211> 17
<212> PRT
<213> Homo sapiens

<400> 311
Met Phe Thr Leu Leu Val Leu Leu Ser Gln Leu Pro Thr Val Thr Leu
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<210> 312

<211> 209

<212> PRT

<213> Homo sapiens

<400> 312

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Glu Val Phe Thr Ser Lys Glu Glu Ala Asn Phe Phe Ile His Arg Arg

20

25

30

Leu Leu Tyr Asn Arg Phe Asp Leu Glu Leu Phe Thr Pro Gly Asn Leu

35

40

45

Glu Arg Glu Cys Asn Glu Glu Leu Cys Asn Tyr Glu Glu Ala Arg Glu

50

55

60

Ile Phe Val Asp Glu Asp Lys Thr Ile Ala Phe Trp Gln Glu Tyr Ser

65

70

75

80

Ala Lys Gly Pro Thr Thr Lys Ser Asp Gly Asn Arg Glu Lys Ile Asp

85

90

95

Val Met Gly Leu Leu Thr Gly Leu Ile Ala Ala Gly Val Phe Leu Val

100

105

110

Ile Phe Gly Leu Leu Gly Tyr Tyr Leu Cys Ile Thr Lys Cys Asn Arg

115

120

125

Leu Gln His Pro Cys Ser Ser Ala Val Tyr Glu Arg Gly Arg His Thr

130

135

140

Pro Ser Ile Ile Phe Arg Arg Pro Glu Glu Ala Ala Leu Ser Pro Leu

145

150

155

160

Pro Pro Ser Val Glu Asp Ala Gly Leu Pro Ser Tyr Glu Gln Ala Val

165

170

175

Ala Leu Thr Arg Lys His Ser Val Ser Pro Pro Pro Pro Tyr Pro Gly

180

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His Thr Lys Gly Phe Arg Val Phe Lys Lys Ser Met Ser Leu Pro Ser

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205

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<212> PRT
<213> Homo sapiens

<400> 313
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20 25 30

Leu Leu Tyr Asn Arg Phe Asp Leu Glu Leu Phe Thr Pro Gly Asn Leu
35 40 45

Glu Arg Glu Cys Asn Glu Glu Leu Cys Asn Tyr Glu Glu Ala Arg Glu
50 55 60

Ile Phe Val Asp Glu Asp Lys Thr Ile Ala Phe Trp Gln Glu Tyr Ser
65 70 75 80

Ala Lys Gly Pro Thr Thr Lys Ser Asp Gly Asn Arg Glu Lys Ile Asp
85 90 95

<210> 314
<211> 25
<212> PRT
<213> Homo sapiens

<400> 314
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Ile Phe Gly Leu Leu Gly Tyr Tyr Leu
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<210> 315
<211> 88
<212> PRT
<213> Homo sapiens

<400> 315
Cys Ile Thr Lys Cys Asn Arg Leu Gln His Pro Cys Ser Ser Ala Val

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Tyr Glu Arg Gly Arg His Thr Pro Ser Ile Ile Phe Arg Arg Pro Glu
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Glu Ala Ala Leu Ser Pro Leu Pro Pro Ser Val Glu Asp Ala Gly Leu
35 40 45

Pro Ser Tyr Glu Gln Ala Val Ala Leu Thr Arg Lys His Ser Val Ser
50 55 60

Pro Pro Pro Pro Tyr Pro Gly His Thr Lys Gly Phe Arg Val Phe Lys
65 70 75 80

Lys Ser Met Ser Leu Pro Ser His
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<210> 325
<211> 1059
<212> DNA
<213> *Homo sapiens*

<400> 325

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<210> 326

<211> 353

<212> PRT

<213> Homo sapiens

<400> 326

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Leu Leu Pro Pro Ala Pro Glu Ala Ala Lys Lys Pro Thr Pro Cys His
20 25 30

Arg Cys Arg Gly Leu Val Asp Lys Phe Asn Gln Gly Met Val Asp Thr
 35 40 45

Ala Lys Lys Asn Phe Gly Gly Gly Asn Thr Ala Trp Glu Glu Lys Thr
50 55 60

Leu Ser Lys Tyr Glu Ser Ser Glu Ile Arg Leu Leu Glu Ile Leu Glu
65 70 75 80

Gly Leu Cys Glu Ser Ser Asp Phe Glu Cys Asn Gln Met Leu Glu Ala
85 90 95

Gln Glu Glu His Leu Glu Ala Trp Trp Leu Gln Leu Lys Ser Glu Tyr
 100 105 110

Pro Asp Leu Phe Glu Trp Phe Cys Val Lys Thr Leu Lys Val Cys Cys

115 120 125

Ser Pro Gly Thr Tyr Gly Pro Asp Cys Leu Ala Cys Gln Gly Gly Ser
130 135 140

Gln Arg Pro Cys Ser Gly Asn Gly His Cys Ser Gly Asp Gly Ser Arg
145 150 155 160

Gln Gly Asp Gly Ser Cys Arg Cys His Met Gly Tyr Gln Gly Pro Leu
165 170 175

Cys Thr Asp Cys Met Asp Gly Tyr Phe Ser Ser Leu Arg Asn Glu Thr
180 185 190

His Ser Ile Cys Thr Ala Cys Asp Glu Ser Cys Lys Thr Cys Ser Gly
195 200 205

Leu Thr Asn Arg Asp Cys Gly Glu Cys Glu Val Gly Trp Val Leu Asp
210 215 220

Glu Gly Ala Cys Val Asp Val Asp Glu Cys Ala Ala Glu Pro Pro Pro
225 230 235 240

Cys Ser Ala Ala Gln Phe Cys Lys Asn Ala Asn Gly Ser Tyr Thr Cys
245 250 255

Glu Glu Cys Asp Ser Ser Cys Val Gly Cys Thr Gly Glu Gly Pro Gly
260 265 270

Asn Cys Lys Glu Cys Ile Ser Gly Tyr Ala Arg Glu His Gly Gln Cys
275 280 285

Ala Asp Val Asp Glu Cys Ser Leu Ala Glu Lys Thr Cys Val Arg Lys
290 295 300

Asn Glu Asn Cys Tyr Asn Thr Pro Gly Ser Tyr Val Cys Val Cys Pro
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Asp Gly Phe Glu Glu Thr Glu Asp Ala Cys Val Pro Pro Ala Glu Ala
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Glu Ala Thr Glu Gly Glu Ser Pro Thr Gln Leu Pro Ser Arg Glu Asp
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Leu

<210> 327
<211> 24
<212> PRT
<213> Homo sapiens

<400> 327
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Leu Leu Pro Pro Ala Pro Glu Ala
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<210> 328
<211> 329
<212> PRT
<213> Homo sapiens

<400> 328
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Phe Asn Gln Gly Met Val Asp Thr Ala Lys Lys Asn Phe Gly Gly Gly
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Asn Thr Ala Trp Glu Glu Lys Thr Leu Ser Lys Tyr Glu Ser Ser Glu
35 40 45

Ile Arg Leu Leu Glu Ile Leu Glu Gly Leu Cys Glu Ser Ser Asp Phe
50 55 60

Glu Cys Asn Gln Met Leu Glu Ala Gln Glu Glu His Leu Glu Ala Trp
65 70 75 80

Trp Leu Gln Leu Lys Ser Glu Tyr Pro Asp Leu Phe Glu Trp Phe Cys
85 90 95

Val Lys Thr Leu Lys Val Cys Cys Ser Pro Gly Thr Tyr Gly Pro Asp
100 105 110

Cys Leu Ala Cys Gln Gly Gly Ser Gln Arg Pro Cys Ser Gly Asn Gly
115 120 125

His Cys Ser Gly Asp Gly Ser Arg Gln Gly Asp Gly Ser Cys Arg Cys
130 135 140

His Met Gly Tyr Gln Gly Pro Leu Cys Thr Asp Cys Met Asp Gly Tyr
145 150 155 160

Phe Ser Ser Leu Arg Asn Glu Thr His Ser Ile Cys Thr Ala Cys Asp
165 170 175

Glu Ser Cys Lys Thr Cys Ser Gly Leu Thr Asn Arg Asp Cys Gly Glu
180 185 190

Cys Glu Val Gly Trp Val Leu Asp Glu Gly Ala Cys Val Asp Val Asp
195 200 205

Glu Cys Ala Ala Glu Pro Pro Pro Cys Ser Ala Ala Gln Phe Cys Lys
210 215 220

Asn Ala Asn Gly Ser Tyr Thr Cys Glu Glu Cys Asp Ser Ser Cys Val
225 230 235 240

Gly Cys Thr Gly Glu Gly Pro Gly Asn Cys Lys Glu Cys Ile Ser Gly
245 250 255

Tyr Ala Arg Glu His Gly Gln Cys Ala Asp Val Asp Glu Cys Ser Leu
260 265 270

Ala Glu Lys Thr Cys Val Arg Lys Asn Glu Asn Cys Tyr Asn Thr Pro
275 280 285

Gly Ser Tyr Val Cys Val Cys Pro Asp Gly Phe Glu Glu Thr Glu Asp
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Ala Cys Val Pro Pro Ala Glu Ala Glu Ala Thr Glu Gly Glu Ser Pro
305 310 315 320

Thr Gln Leu Pro Ser Arg Glu Asp Leu
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<210> 329
<211> 2730
<212> DNA
<213> Homo sapiens

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gtgttcctg cccctgctgg cagccctggt cctggccca gtcctgcag ctttagcaga 240
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gccaccgccc agccgcccgg ctgtgctggg ctctccgcgg gtcaagtgg a cttccctgtc 420

0
1
2
3
4
5
6
7
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9

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<211> 2013
<212> DNA
<213> Homo sapiens

<400> 330
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<210> 331
<211> 671
<212> PRT
<213> Homo sapiens

<400> 331
Met Ala Gln Leu Phe Leu Pro Leu Leu Ala Ala Leu Val Leu Ala Gln
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Ala Pro Ala Ala Leu Ala Asp Val Leu Glu Gly Asp Ser Ser Glu Asp
20 25 30

Arg Ala Phe Arg Val Arg Ile Ala Gly Asp Ala Pro Leu Gln Gly Val

TOP SECRET//NOFORN

35

40

45

Leu Gly Gly Ala Leu Thr Ile Pro Cys His Val His Tyr Leu Arg Pro
50 55 60

Pro Pro Ser Arg Arg Ala Val Leu Gly Ser Pro Arg Val Lys Trp Thr
65 70 75 80

Phe Leu Ser Arg Gly Arg Glu Ala Glu Val Leu Val Ala Arg Gly Val
85 90 95

Arg Val Lys Val Asn Glu Ala Tyr Arg Phe Arg Val Ala Leu Pro Ala
100 105 110

Tyr Pro Ala Ser Leu Thr Asp Val Ser Leu Ala Leu Ser Glu Leu Arg
115 120 125

Pro Asn Asp Ser Gly Ile Tyr Arg Cys Glu Val Gln His Gly Ile Asp
130 135 140

Asp Ser Ser Asp Ala Val Glu Val Lys Val Lys Gly Val Val Phe Leu
145 150 155 160

Tyr Arg Glu Gly Ser Ala Arg Tyr Ala Phe Ser Phe Ser Gly Ala Gln
165 170 175

Glu Ala Cys Ala Arg Ile Gly Ala His Ile Ala Thr Pro Glu Gln Leu
180 185 190

Tyr Ala Ala Tyr Leu Gly Gly Tyr Glu Gln Cys Asp Ala Gly Trp Leu
195 200 205

Ser Asp Gln Thr Val Arg Tyr Pro Ile Gln Thr Pro Arg Glu Ala Cys
210 215 220

Tyr Gly Asp Met Asp Gly Phe Pro Gly Val Arg Asn Tyr Gly Val Val
225 230 235 240

Asp Pro Asp Asp Leu Tyr Asp Val Tyr Cys Tyr Ala Glu Asp Leu Asn
245 250 255

Gly Glu Leu Phe Leu Gly Asp Pro Pro Glu Lys Leu Thr Leu Glu Glu
260 265 270

Ala Arg Ala Tyr Cys Gln Glu Arg Gly Ala Glu Ile Ala Thr Thr Gly
275 280 285

Gln Leu Tyr Ala Ala Trp Asp Gly Gly Leu Asp His Cys Ser Pro Gly

290 295 300
Trp Leu Ala Asp Gly Ser Val Arg Tyr Pro Ile Val Thr Pro Ser Gln
305 310 315 320
Arg Cys Gly Gly Leu Pro Gly Val Lys Thr Leu Phe Leu Phe Pro
325 330 335
Asn Gln Thr Gly Phe Pro Asn Lys His Ser Arg Phe Asn Val Tyr Cys
340 345 350
Phe Arg Asp Ser Ala Gln Pro Ser Ala Ile Pro Glu Ala Ser Asn Pro
355 360 365
Ala Ser Asn Pro Ala Ser Asp Gly Leu Glu Ala Ile Val Thr Val Thr
370 375 380
Glu Thr Leu Glu Glu Leu Gln Leu Pro Gln Glu Ala Thr Glu Ser Glu
385 390 395 400
Ser Arg Gly Ala Ile Tyr Ser Ile Pro Ile Met Glu Asp Gly Gly Gly
405 410 415
Gly Ser Ser Thr Pro Glu Asp Pro Ala Glu Ala Pro Arg Thr Leu Leu
420 425 430
Glu Phe Glu Thr Gln Ser Met Val Pro Pro Thr Gly Phe Ser Glu Glu
435 440 445
Glu Gly Lys Ala Leu Glu Glu Glu Lys Tyr Glu Asp Glu Glu Glu
450 455 460
Lys Glu Glu Glu Glu Glu Glu Val Glu Asp Glu Ala Leu Trp
465 470 475 480
Ala Trp Pro Ser Glu Leu Ser Ser Pro Gly Pro Glu Ala Ser Leu Pro
485 490 495
Thr Glu Pro Ala Ala Gln Glu Lys Ser Leu Ser Gln Ala Pro Ala Arg
500 505 510
Ala Val Leu Gln Pro Gly Ala Ser Pro Leu Pro Asp Gly Glu Ser Glu
515 520 525
Ala Ser Arg Pro Pro Arg Val His Gly Pro Pro Thr Glu Thr Leu Pro
530 535 540
Thr Pro Arg Glu Arg Asn Leu Ala Ser Pro Ser Pro Ser Thr Leu Val

F O R M A T E D

545	550	555	560
Glu Ala Arg Glu Val Gly Glu Ala Thr Gly Gly Pro Glu Leu Ser Gly			
565	570	575	
Val Pro Arg Gly Glu Ser Glu Glu Thr Gly Ser Ser Glu Gly Ala Pro			
580	585	590	
Ser Leu Leu Pro Ala Thr Arg Ala Pro Glu Gly Thr Arg Glu Leu Glu			
595	600	605	
Ala Pro Ser Glu Asp Asn Ser Gly Arg Thr Ala Pro Ala Gly Thr Ser			
610	615	620	
Val Gln Ala Gln Pro Val Leu Pro Thr Asp Ser Ala Ser Arg Gly Gly			
625	630	635	640
Val Ala Val Val Pro Ala Ser Gly Asn Ser Ala Gln Gly Ser Thr Ala			
645	650	655	
Leu Ser Ile Leu Leu Phe Phe Pro Leu Gln Leu Trp Val Thr			
660	665	670	
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<212> PRT			
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Ala Pro Ala Ala Leu Ala			
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<400> 333			
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Ile Pro Cys His Val His Tyr Leu Arg Pro Pro Pro Ser Arg Arg Ala
35 40 45

Val Leu Gly Ser Pro Arg Val Lys Trp Thr Phe Leu Ser Arg Gly Arg
50 55 60

Glu Ala Glu Val Leu Val Ala Arg Gly Val Arg Val Lys Val Asn Glu
65 70 75 80

Ala Tyr Arg Phe Arg Val Ala Leu Pro Ala Tyr Pro Ala Ser Leu Thr
85 90 95

Asp Val Ser Leu Ala Leu Ser Glu Leu Arg Pro Asn Asp Ser Gly Ile
100 105 110

Tyr Arg Cys Glu Val Gln His Gly Ile Asp Asp Ser Ser Asp Ala Val
115 120 125

Glu Val Lys Val Lys Gly Val Val Phe Leu Tyr Arg Glu Gly Ser Ala
130 135 140

Arg Tyr Ala Phe Ser Phe Ser Gly Ala Gln Glu Ala Cys Ala Arg Ile
145 150 155 160

Gly Ala His Ile Ala Thr Pro Glu Gln Leu Tyr Ala Ala Tyr Leu Gly
165 170 175

Gly Tyr Glu Gln Cys Asp Ala Gly Trp Leu Ser Asp Gln Thr Val Arg
180 185 190

Tyr Pro Ile Gln Thr Pro Arg Glu Ala Cys Tyr Gly Asp Met Asp Gly
195 200 205

Phe Pro Gly Val Arg Asn Tyr Gly Val Val Asp Pro Asp Asp Leu Tyr
210 215 220

Asp Val Tyr Cys Tyr Ala Glu Asp Leu Asn Gly Glu Leu Phe Leu Gly
225 230 235 240

Asp Pro Pro Glu Lys Leu Thr Leu Glu Glu Ala Arg Ala Tyr Cys Gln
245 250 255

Glu Arg Gly Ala Glu Ile Ala Thr Thr Gly Gln Leu Tyr Ala Ala Trp
260 265 270

Asp Gly Gly Leu Asp His Cys Ser Pro Gly Trp Leu Ala Asp Gly Ser
275 280 285

Val Arg Tyr Pro Ile Val Thr Pro Ser Gln Arg Cys Gly Gly Leu
290 295 300

Pro Gly Val Lys Thr Leu Phe Leu Phe Pro Asn Gln Thr Gly Phe Pro
305 310 315 320

Asn Lys His Ser Arg Phe Asn Val Tyr Cys Phe Arg Asp Ser Ala Gln
325 330 335

Pro Ser Ala Ile Pro Glu Ala Ser Asn Pro Ala Ser Asn Pro Ala Ser
340 345 350

Asp Gly Leu Glu Ala Ile Val Thr Val Thr Glu Thr Leu Glu Glu Leu
355 360 365

Gln Leu Pro Gln Glu Ala Thr Glu Ser Glu Ser Arg Gly Ala Ile Tyr
370 375 380

Ser Ile Pro Ile Met Glu Asp Gly Gly Ser Ser Thr Pro Glu
385 390 395 400

Asp Pro Ala Glu Ala Pro Arg Thr Leu Leu Glu Phe Glu Thr Gln Ser
405 410 415

Met Val Pro Pro Thr Gly Phe Ser Glu Glu Glu Gly Lys Ala Leu Glu
420 425 430

Glu Glu Glu Lys Tyr Glu Asp Glu Glu Glu Lys Glu Glu Glu Glu
435 440 445

Glu Glu Glu Val Glu Asp Glu Ala Leu Trp Ala Trp Pro Ser Glu Leu
450 455 460

Ser Ser Pro Gly Pro Glu Ala Ser Leu Pro Thr Glu Pro Ala Ala Gln
465 470 475 480

Glu Lys Ser Leu Ser Gln Ala Pro Ala Arg Ala Val Leu Gln Pro Gly
485 490 495

Ala Ser Pro Leu Pro Asp Gly Glu Ser Glu Ala Ser Arg Pro Pro Arg
500 505 510

Val His Gly Pro Pro Thr Glu Thr Leu Pro Thr Pro Arg Glu Arg Asn
515 520 525

Leu Ala Ser Pro Ser Pro Ser Thr Leu Val Glu Ala Arg Glu Val Gly
530 535 540

Glu Ala Thr Gly Gly Pro Glu Leu Ser Gly Val Pro Arg Gly Glu Ser
545 550 555 560

Glu Glu Thr Gly Ser Ser Glu Gly Ala Pro Ser Leu Leu Pro Ala Thr
565 570 575

Arg Ala Pro Glu Gly Thr Arg Glu Leu Glu Ala Pro Ser Glu Asp Asn
580 585 590

Ser Gly Arg Thr Ala Pro Ala Gly Thr Ser Val Gln Ala Gln Pro Val
595 600 605

Leu Pro Thr Asp Ser Ala Ser Arg Gly Gly Val Ala Val Val Pro Ala
610 615 620

Ser Gly Asn Ser Ala Gln Gly Ser Thr Ala Leu Ser Ile Leu Leu Leu
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Phe Phe Pro Leu Gln Leu Trp Val Thr
645

<210> 334
<211> 456
<212> PRT
<213> Pigeon pea witches'-broom phytoplasma

<400> 334
Met Asn Leu Asp Ile His Cys Glu Gln Leu Ser Asp Ala Arg Trp Thr
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Glu Leu Leu Pro Leu Leu Gln Gln Tyr Glu Val Val Arg Leu Asp Asp
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Cys Gly Leu Thr Glu Glu His Cys Lys Asp Ile Gly Ser Ala Leu Arg
35 40 45

Ala Asn Pro Ser Leu Thr Glu Leu Cys Leu Arg Thr Asn Glu Leu Gly
50 55 60

Asp Ala Gly Val His Leu Val Leu Gln Gly Leu Gln Ser Pro Thr Cys
65 70 75 80

Lys Ile Gln Lys Leu Ser Leu Gln Asn Cys Ser Leu Thr Glu Ala Gly
85 90 95

Cys Gly Val Leu Pro Ser Thr Leu Arg Ser Leu Pro Thr Leu Arg Glu

PDB ID: 1J2D

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Leu His Leu Ser Asp Asn Pro Leu Gly Asp Ala Gly Leu Arg.	Leu	
115	120	125
Cys Glu Gly Leu Leu Asp Pro Gln Cys His Leu Glu Lys Leu Gln Leu		
130	135	140
Glu Tyr Cys Arg Leu Thr Ala Ala Ser Cys Glu Pro Leu Ala Ser Val		
145	150	155
Leu Arg Ala Thr Arg Ala Leu Lys Glu Leu Thr Val Ser Asn Asn Asp		
165	170	175
Ile Gly Glu Ala Gly Ala Arg Val Leu Gly Gln Gly Leu Ala Asp Ser		
180	185	190
Ala Cys Gln Leu Glu Thr Leu Arg Leu Glu Asn Cys Gly Leu Thr Pro		
195	200	205
Ala Asn Cys Lys Asp Leu Cys Gly Ile Val Ala Ser Gln Ala Ser Leu		
210	215	220
Arg Glu Leu Asp Leu Gly Ser Asn Gly Leu Gly Asp Ala Gly Ile Ala		
225	230	235
Glu Leu Cys Pro Gly Leu Leu Ser Pro Ala Ser Arg Leu Lys Thr Leu		
245	250	255
Trp Leu Trp Glu Cys Asp Ile Thr Ala Ser Gly Cys Arg Asp Leu Cys		
260	265	270
Arg Val Leu Gln Ala Lys Glu Thr Leu Lys Glu Leu Ser Leu Ala Gly		
275	280	285
Asn Lys Leu Gly Asp Glu Gly Ala Arg Leu Leu Cys Glu Ser Leu Leu		
290	295	300
Gln Pro Gly Cys Gln Leu Glu Ser Leu Trp Val Lys Ser Cys Ser Leu		
305	310	315
Thr Ala Ala Cys Cys Gln His Val Ser Leu Met Leu Thr Gln Asn Lys		
325	330	335
His Leu Leu Glu Leu Gln Leu Ser Ser Asn Lys Leu Gly Asp Ser Gly		
340	345	350
Ile Gln Glu Leu Cys Gln Ala Leu Ser Gln Pro Gly Thr Thr Leu Arg		

B D E F G H C S O

355	360	365
Val Leu Cys Leu Gly Asp Cys Glu Val Thr Asn Ser Gly Cys Ser Ser		
370	375	380
Leu Ala Ser Leu Leu Ala Asn Arg Ser Leu Arg Glu Leu Asp Leu		
385	390	395
Ser Asn Asn Cys Val Gly Asp Pro Gly Val Leu Gln Leu Leu Gly Ser		
405	410	415
Leu Glu Gln Pro Gly Cys Ala Leu Glu Gln Leu Val Leu Tyr Asp Thr		
420	425	430
Tyr Trp Thr Glu Glu Val Glu Asp Arg Leu Gln Ala Leu Glu Gly Ser		
435	440	445
Lys Pro Gly Leu Arg Val Ile Ser		
450	455	
<210> 335		
<211> 834		
<212> PRT		
<213> Mus sp.		
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20	25	30
Val Ser Ser Gly Glu Leu Val Thr Val Val Arg Arg Phe Ser Gln Thr		
35	40	45
Gly Ile Gln Asp Phe Leu Thr Leu Thr Leu Thr Glu His Ser Gly Leu		
50	55	60
Leu Tyr Val Gly Ala Arg Glu Ala Leu Phe Ala Phe Ser Val Glu Ala		
65	70	75
		80
Leu Glu Leu Gln Gly Ala Ile Ser Trp Glu Ala Pro Ala Glu Lys Lys		
85	90	95
Ile Glu Cys Thr Gln Lys Gly Lys Ser Asn Gln Thr Glu Cys Phe Asn		
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Phe Ile Arg Phe Leu Gln Pro Tyr Asn Ser Ser His Leu Tyr Val Cys
115 120 125

Gly Thr Tyr Ala Phe Gln Pro Lys Cys Thr Tyr Ile Asn Met Leu Thr
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Phe Thr Leu Asp Arg Ala Glu Phe Asp Gly Lys Gly Lys Cys Pro
145 150 155 160

Tyr Asp Pro Ala Lys Gly His Thr Gly Leu Leu Val Asp Gly Glu Leu
165 170 175

Tyr Ser Ala Thr Leu Asn Asn Phe Leu Gly Thr Glu Pro Val Ile Leu
180 185 190

Arg Tyr Met Gly Thr His His Ser Ile Lys Thr Glu Tyr Leu Ala Phe
195 200 205

Trp Leu Asn Glu Pro His Phe Val Gly Ser Ala Phe Val Pro Glu Ser
210 215 220

Val Gly Ser Phe Thr Gly Asp Asp Asp Lys Ile Tyr Phe Phe Phe Ser
225 230 235 240

Glu Arg Ala Val Glu Tyr Asp Cys Tyr Ser Glu Gln Val Val Ala Arg
245 250 255

Val Ala Arg Val Cys Lys Gly Asp Met Gly Gly Ala Arg Thr Leu Gln
260 265 270

Lys Lys Trp Thr Thr Phe Leu Lys Ala Arg Leu Val Cys Ser Ala Pro
275 280 285

Asp Trp Lys Val Tyr Phe Asn Gln Leu Lys Ala Val His Thr Leu Arg
290 295 300

Gly Ala Ser Trp His Asn Thr Thr Phe Phe Gly Val Phe Gln Ala Arg
305 310 315 320

Trp Gly Asp Met Asp Leu Ser Ala Val Cys Glu Tyr Gln Leu Glu Gln
325 330 335

Ile Gln Gln Val Phe Glu Gly Pro Tyr Lys Glu Tyr Ser Glu Gln Ala
340 345 350

Gln Lys Trp Ala Arg Tyr Thr Asp Pro Val Pro Ser Pro Arg Pro Gly
355 360 365

Ser Cys Ile Asn Asn Trp His Arg Asp Asn Gly Tyr Thr Ser Ser Leu
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 Glu Leu Pro Asp Asn Thr Leu Asn Phe Ile Lys Lys His Pro Leu Met
 385 390 395 400

 Glu Asp Gln Val Lys Pro Arg Leu Gly Arg Pro Leu Leu Val Lys Lys
 405 410 415

 Asn Thr Asn Phe Thr His Val Val Ala Asp Arg Val Pro Gly Leu Asp
 420 425 430

 Gly Ala Thr Tyr Thr Val Leu Phe Ile Gly Thr Gly Asp Gly Trp Leu
 435 440 445

 Leu Lys Ala Val Ser Leu Gly Pro Trp Ile His Met Val Glu Glu Leu
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 Lys Lys Val Leu Phe Ala Gly Ser Arg Ser Gln Leu Val Gln Leu Ser
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 Leu Ala Asp Cys Thr Lys Tyr Arg Phe Cys Val Asp Cys Val Leu Ala
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 Arg Asp Pro Tyr Cys Ala Trp Asn Val Asn Thr Ser Arg Cys Val Ala
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 Thr Thr Ser Gly Arg Ser Gly Ser Phe Leu Val Gln His Val Ala Asn
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 Leu Asp Thr Ser Lys Met Cys Asn Gln Tyr Gly Ile Lys Lys Val Arg
 545 550 555 560

 Ser Ile Pro Lys Asn Ile Thr Val Val Ser Gly Thr Asp Leu Val Leu
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 Pro Cys His Leu Ser Ser Asn Leu Ala His Ala His Trp Thr Phe Gly
 580 585 590

 Ser Gln Asp Leu Pro Ala Glu Gln Pro Gly Ser Phe Leu Tyr Asp Thr
 595 600 605

 Gly Leu Gln Ala Leu Val Val Met Ala Ala Gln Ser Arg His Ser Gly
 610 615 620

FOLKSON

Pro Tyr Arg Cys Tyr Ser Glu Glu Gln Gly Thr Arg Leu Ala Ala Glu
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Ser Tyr Leu Val Ala Val Val Ala Gly Ser Ser Val Thr Leu Glu Ala
645 650 655

Arg Ala Pro Leu Glu Asn Leu Gly Leu Val Trp Leu Ala Val Val Ala
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Leu Gly Ala Val Cys Leu Val Leu Leu Leu Val Leu Ser Leu Arg
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Arg Arg Leu Arg Glu Glu Leu Glu Lys Gly Ala Lys Ala Ser Glu Arg
690 695 700

Thr Leu Val Tyr Pro Leu Glu Leu Pro Lys Glu Pro Ala Ser Pro Pro
705 710 715 720

Phe Arg Pro Gly Pro Glu Thr Asp Glu Lys Leu Trp Asp Pro Val Gly
725 730 735

Tyr Tyr Tyr Ser Asp Gly Ser Leu Lys Ile Val Pro Gly His Ala Arg
740 745 750

Cys Gln Pro Gly Gly Pro Pro Ser Pro Pro Pro Gly Ile Pro Gly
755 760 765

Gln Pro Leu Pro Ser Pro Thr Arg Leu His Leu Gly Gly Arg Asn
770 775 780

Ser Asn Ala Asn Gly Tyr Val Arg Leu Gln Leu Gly Gly Glu Asp Arg
785 790 795 800

Gly Gly Ser Gly His Pro Leu Pro Glu Leu Ala Asp Glu Leu Arg Arg
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Lys Leu Gln Gln Arg Gln Pro Leu Pro Asp Ser Asn Pro Glu Glu Ser
820 825 830

Ser Val

<210> 336
<211> 3503
<212> DNA
<213> Mus sp.

<400> 336

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<210> 338
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<210> 339
<211> 348
<212> PRT
<213> Cricetulus griseus

<400> 339
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Cys Arg Ala Leu Val Asp Lys Phe Asn Gln Gly Met Ala Asn Thr Ala
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Arg Lys Asn Phe Gly Gly Asn Thr Ala Trp Glu Glu Lys Ser Leu
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Ser Lys Tyr Glu Phe Ser Glu Ile Arg Leu Leu Glu Ile Met Glu Gly
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Leu Cys Asp Ser Asn Asp Phe Glu Cys Asn Gln Leu Leu Glu Gln His
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Glu Glu Gln Leu Glu Ala Trp Trp Gln Thr Leu Lys Lys Glu Cys Pro
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Asn Leu Phe Glu Trp Phe Cys Val His Thr Leu Lys Ala Cys Cys Leu
115 120 125

Pro Gly Thr Tyr Gly Pro Asp Cys Gln Glu Cys Gln Gly Gly Ser Gln
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Arg Pro Cys Ser Gly Asn Gly His Cys Asp Gly Asp Gly Ser Arg Gln
145 150 155 160

Gly Asp Gly Ser Cys Gln Cys His Val Gly Tyr Lys Gly Pro Leu Cys
165 170 175

Ile Asp Cys Met Asp Gly Tyr Phe Ser Leu Leu Arg Asn Glu Thr His
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Ser Phe Cys Thr Ala Cys Asp Glu Ser Cys Lys Thr Cys Ser Gly Pro
195 200 205

Thr Asn Lys Gly Cys Val Glu Cys Glu Val Gly Trp Thr Arg Val Glu
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Asp Ala Cys Val Asp Val Asp Glu Cys Ala Ala Glu Thr Pro Pro Cys
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Ser Asn Val Gln Tyr Cys Glu Asn Val Asn Gly Ser Tyr Thr Cys Glu
245 250 255

Glu Cys Asp Ser Thr Cys Val Gly Cys Thr Gly Lys Gly Pro Ala Asn
260 265 270

Cys Lys Glu Cys Ile Ser Gly Tyr Ser Lys Gln Lys Gly Glu Cys Ala
275 280 285

Asp Ile Asp Glu Cys Ser Leu Glu Thr Lys Val Cys Lys Lys Glu Asn
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Glu Asn Cys Tyr Asn Thr Pro Gly Ser Phe Val Cys Val Cys Pro Glu
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<211> 528
<212> PRT
<213> Homo sapiens

<400> 341
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Arg Ala Phe Arg Val Arg Ile Ala Gly Asp Ala Pro Leu Gln Gly Val
35 40 45

PDB ID: 3ETG

Leu Gly Gly Ala Leu Thr Ile Pro Cys His Val His Tyr Leu Arg Pro
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Pro Pro Ser Arg Arg Ala Val Leu Gly Ser Pro Arg Val Lys Trp Thr
65 70 75 80

Phe Leu Ser Arg Gly Arg Glu Ala Glu Val Leu Val Ala Arg Gly Val
85 90 95

Arg Val Lys Val Asn Glu Ala Tyr Arg Phe Arg Val Ala Leu Pro Ala
100 105 110

Tyr Pro Ala Ser Leu Thr Asp Val Ser Leu Ala Leu Ser Glu Leu Arg
115 120 125

Pro Asn Asp Ser Gly Ile Tyr Arg Cys Glu Val Gln His Gly Ile Asp
130 135 140

Asp Ser Ser Asp Ala Val Glu Ser Ser Gln Arg Tyr Pro Ile Gln Thr
145 150 155 160

Pro Arg Glu Ala Cys Tyr Gly Asp Met Asp Gly Phe Pro Gly Val Arg
165 170 175

Asn Tyr Gly Val Val Asp Pro Asp Asp Leu Tyr Asp Val Tyr Cys Tyr
180 185 190

Ala Glu Asp Leu Asn Gly Glu Leu Phe Leu Gly Asp Pro Pro Glu Lys
195 200 205

Leu Thr Leu Glu Glu Ala Arg Ala Tyr Cys Gln Glu Arg Gly Ala Glu
210 215 220

Ile Ala Thr Thr Gly Gln Leu Tyr Ala Ala Trp Asp Gly Gly Leu Asp
225 230 235 240

His Cys Ser Pro Gly Trp Leu Ala Asp Gly Ser Val Arg Tyr Pro Ile
245 250 255

Val Thr Pro Ser Gln Arg Cys Gly Gly Leu Pro Gly Val Lys Thr
260 265 270

Leu Phe Leu Phe Pro Asn Gln Thr Gly Phe Pro Asn Lys His Ser Arg
275 280 285

Phe Asn Val Tyr Cys Phe Arg Asp Ser Ala Gln Leu Leu Pro Ser Leu
290 295 300

PDB ID: 2E70

Arg Pro Pro Thr Gln Pro Pro Thr Gln Leu Asp Gly Leu Glu Ala Ile			
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Thr Glu Ser Glu Ser Arg Gly Ala Ile Tyr Ser Ile Pro Ile Met Glu			
340	345	350	
Asp Gly Gly Gly Ser Ser Thr Pro Glu Asp Pro Ala Glu Ala Pro			
355	360	365	
Arg Thr Leu Leu Glu Phe Glu Thr Gln Ser Met Val Pro Pro Thr Gly			
370	375	380	
Phe Ser Glu Glu Glu Gly Lys Ala Leu Glu Glu Glu Lys Tyr Glu			
385	390	395	400
Asp Glu Glu Glu Lys Glu Glu Glu Glu Glu Glu Val Glu Asp			
405	410	415	
Glu Ala Leu Trp Ala Trp Pro Ser Glu Leu Ser Ser Pro Gly Pro Glu			
420	425	430	
Ala Ser Leu Pro Thr Glu Pro Ala Ala Gln Glu Glu Ser Leu Ser Gln			
435	440	445	
Ala Pro Ala Arg Ala Val Leu Gln Pro Gly Ala Ser Pro Leu Pro Asp			
450	455	460	
Gly Glu Ser Glu Ala Ser Arg Pro Pro Arg Val His Gly Pro Pro Thr			
465	470	475	480
Glu Thr Leu Pro Thr Pro Arg Glu Arg Asn Leu Ala Ser Pro Ser Pro			
485	490	495	
Ser Thr Leu Val Glu Ala Arg Glu Val Gly Glu Ala Thr Gly Gly Pro			
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Glu Leu Ser Gly Val Pro Arg Gly Gly Ala Arg Thr Gln Phe Ala Leu			
515	520	525	

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<212> PRT

<213> Mus sp.

<400> 342

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Gly Gly Ala Leu Ala Ile Pro Cys His Val His His Leu Arg Pro Pro
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Arg Ser Arg Arg Ala Ala Pro Gly Phe Pro Arg Val Lys Trp Thr Phe
65 70 75 80

Leu Ser Gly Asp Arg Glu Val Glu Val Leu Val Ala Arg Gly Leu Arg
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Val Lys Val Asn Glu Ala Tyr Arg Phe Arg Val Ala Leu Pro Ala Tyr
100 105 110

Pro Ala Ser Leu Thr Asp Val Ser Leu Val Leu Ser Glu Leu Arg Pro
115 120 125

Asn Asp Ser Gly Val Tyr Arg Cys Glu Val Gln His Gly Ile Asp Asp
130 135 140

Ser Ser Asp Ala Val Glu Val Lys Val Lys Gly Val Val Phe Leu Tyr
145 150 155 160

Arg Glu Gly Ser Ala Arg Tyr Ala Phe Ser Phe Ala Gly Ala Gln Glu
165 170 175

Ala Cys Ala Arg Ile Gly Ala Arg Ile Ala Thr Pro Glu Gln Leu Tyr
180 185 190

Ala Ala Tyr Leu Gly Gly Tyr Glu Gln Cys Asp Ala Gly Trp Leu Ser
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Asp Gln Thr Val Arg Tyr Pro Ile Gln Asn Pro Arg Glu Ala Cys Ser
210 215 220

Gly Asp Met Asp Gly Tyr Pro Gly Val Arg Asn Tyr Gly Val Val Gly
225 230 235 240

PDB ID: 3D765A0

Pro Asp Asp Leu Tyr Asp Val Tyr Cys Tyr Ala Glu Asp Leu Asn Gly
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Glu Leu Phe Leu Gly Ala Pro Pro Ser Lys Leu Thr Trp Glu Glu Ala
260 265 270

Arg Asp Tyr Cys Leu Glu Arg Gly Ala Gln Ile Ala Ser Thr Gly Gln
275 280 285

Leu Tyr Ala Ala Trp Asn Gly Gly Leu Asp Arg Cys Ser Pro Gly Trp
290 295 300

Leu Ala Asp Gly Ser Val Arg Tyr Pro Ile Ile Thr Pro Ser Gln Arg
305 310 315 320

Cys Gly Gly Gly Leu Pro Gly Val Lys Thr Leu Phe Leu Phe Pro Asn
325 330 335

Gln Thr Gly Phe Pro Ser Lys Gln Asn Arg Phe Asn Val Tyr Cys Phe
340 345 350

Arg Asp Ser Ala His Pro Ser Ala Ser Ser Glu Ala Ser Ser Pro Ala
355 360 365

Ser Asp Gly Leu Glu Ala Ile Val Thr Val Thr Glu Lys Leu Glu Glu
370 375 380

Leu Gln Leu Pro Gln Glu Ala Met Glu Ser Glu Ser Arg Gly Ala Ile
385 390 395 400

Tyr Ser Ile Pro Ile Ser Glu Asp Gly Gly Gly Ser Ser Thr Pro
405 410 415

Glu Asp Pro Ala Glu Ala Pro Arg Thr Pro Leu Glu Ser Glu Thr Gln
420 425 430

Ser Ile Ala Pro Pro Thr Glu Ser Ser Glu Glu Glu Gly Val Ala Leu
435 440 445

Glu Glu Glu Glu Arg Phe Lys Asp Leu Glu Ala Leu Glu Glu Glu Lys
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Glu Gln Glu Asp Leu Trp Val Trp Pro Arg Glu Leu Ser Ser Pro Leu
465 470 475 480

Pro Thr Gly Ser Glu Thr Glu His Ser Leu Ser Gln Val Ser Pro Pro
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Ala Gln Ala Val Leu Gln Leu Asp Ala Ser Pro Ser Pro Gly Pro Pro
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Arg Phe Arg Gly Pro Pro Ala Glu Thr Leu Leu Pro Pro Arg Glu Trp
515 520 525

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Gly Ser Pro Glu Leu Ser Gly Val Pro Arg Glu Ser Glu Glu Ala Gly
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Ser Ser Ser Leu Glu Asp Gly Pro Ser Leu Leu Pro Ala Thr Trp Ala
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Pro Val Gly Pro Arg Glu Leu Glu Thr Pro Ser Glu Glu Lys Ser Gly
580 585 590

Arg Thr Val Leu Ala Gly Thr Ser Val Gln Ala Gln Pro Val Leu Pro
595 600 605

Thr Asp Ser Ala Ser His Gly Gly Val Ala Val Ala Pro Ser Ser Gly
610 615 620

Asp Cys Ile Pro Ser Pro Cys His Asn Gly Gly Thr Cys Leu Glu Glu
625 630 635 640

Lys Glu Gly Phe Arg Cys Leu Cys Leu Pro Gly Tyr Gly Asp Leu
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Cys Asp Val Gly Leu His Phe Cys Ser Pro Gly Trp Glu Ala Phe Gln
660 665 670

Gly Ala Cys Tyr Lys His Phe Ser Thr Arg Arg Ser Trp Glu Glu Ala
675 680 685

Glu Ser Gln Cys Arg Ala Leu Gly Ala His Leu Thr Ser Ile Cys Thr
690 695 700

Pro Glu Glu Gln Asp Phe Val Asn Asp Arg Tyr Arg Glu Tyr Gln Trp
705 710 715 720

Ile Gly Leu Asn Asp Arg Thr Ile Glu Gly Asp Phe Leu Trp Ser Asp
725 730 735

Gly Ala Pro Leu Leu Tyr Glu Asn Trp Asn Pro Gly Gln Pro Asp Ser
740 745 750

Tyr Phe Leu .Ser Gly Glu Asn Cys Val Val Met Val Trp His Asp Gln
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Gly Gln Trp Ser Asp Val Pro Cys Åsn Tyr His Leu Ser Tyr Thr Cys
770 775 780

Lys Met Gly Leu Val Ser Cys Gly Pro Pro Pro Gln Leu Pro Leu Ala
785 790 795 800

Gln Ile Phe Gly Arg Pro Arg Leu Arg Tyr Ala Val Asp Thr Val Leu
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Arg Tyr Arg Cys Arg Asp Gly Leu Ala Gln Arg Asn Leu Pro Leu Ile
 820 825 830

Arg Cys Gln Glu Asn Gly Leu Trp Glu Ala Pro Gln Ile Ser Cys Val
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Pro Arg Arg Pro Gly Arg Ala Leu Arg Ser Met Asp Ala Pro Glu Gly
850 855 860

Pro Arg Gly Gln Leu Ser Arg His Arg Lys Ala Pro Leu Thr Pro Pro
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Ser Ser Leu

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<211> 315
<212> DNA
<213> Mus

<400> 343

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<210> 351
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<212> DNA
<213> Gerbil

<400> 351

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<210> 352
<211> 675
<212> DNA
<213> Gerbil

<400> 352

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<210> 353
<211> 225
<212> PRT
<213> Gerbil

<400> 353

Met Phe Leu Leu Leu Val Val Leu Ser Gln Leu Pro Arg Leu Thr Leu
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Ala Val Pro His Thr Arg Ser Leu Lys Asn Ser Glu His Ala Pro Glu
20 25 30

Gly Val Phe Ala Ser Lys Lys Ala Ala Ser Ile Phe Met His Arg Arg
35 40 45

Leu Leu Tyr Asn Arg Phe Asp Leu Glu Leu Phe Thr Pro Gly Asn Leu
50 55 60

Glu Arg Glu Cys Tyr Glu Glu Phe Cys Ser Tyr Glu Glu Ala Arg Glu
65 70 75 80

Ile Leu Gly Asp Asn Glu Glu Met Ile Thr Phe Trp Arg Glu Tyr Ser
85 90 95

Val Lys Gly Pro Thr Thr Arg Ser Asp Val Asn Lys Glu Lys Ile Asp
100 105 110

Val Met Gly Leu Leu Thr Gly Leu Ile Ala Ala Gly Val Phe Leu Val
115 120 125

Val Phe Gly Leu Leu Gly Tyr Tyr Leu Cys Ile Thr Lys Cys Asn Arg
130 135 140

Gln Pro Tyr Gln Gly Ser Ser Ala Val Tyr Thr Arg Arg Thr Arg His
145 150 155 160

Thr Pro Ser Ile Ile Phe Arg Thr His Glu Glu Ala Val Leu Ser Pro
165 170 175

Ser Ser Ser Ser Glu Asp Ala Gly Leu Pro Ser Tyr Glu Gln Ala Val
180 185 190

Ala Leu Thr Arg Lys His Ser Val Ser Pro Pro Pro Tyr Pro Gly
195 200 205

Pro Ala Lys Gly Phe Arg Val Phe Lys Lys Ser Met Ser Leu Pro Ser
210 215 220

His
225

<210> 354

<211> 17
<212> PRT
<213> Gerbil

<400> 354

Met Phe Leu Leu Leu Val Val Leu Ser Gln Leu Pro Arg Leu Thr Leu
1 5 10 15

Ala

<210> 355
<211> 208
<212> PRT
<213> Gerbil

<400> 355

Val Pro His Thr Arg Ser Leu Lys Asn Ser Glu His Ala Pro Glu Gly
1 5 10 15

Val Phe Ala Ser Lys Lys Ala Ala Ser Ile Phe Met His Arg Arg Leu
20 25 30

Leu Tyr Asn Arg Phe Asp Leu Glu Leu Phe Thr Pro Gly Asn Leu Glu
35 40 45

Arg Glu Cys Tyr Glu Glu Phe Cys Ser Tyr Glu Glu Ala Arg Glu Ile
50 55 60

Leu Gly Asp Asn Glu Glu Met Ile Thr Phe Trp Arg Glu Tyr Ser Val
65 70 75 80

Lys Gly Pro Thr Thr Arg Ser Asp Val Asn Lys Glu Lys Ile Asp Val
85 90 95

Met Gly Leu Leu Thr Gly Leu Ile Ala Ala Gly Val Phe Leu Val Val
100 105 110

Phe Gly Leu Leu Gly Tyr Tyr Leu Cys Ile Thr Lys Cys Asn Arg Gln
115 120 125

Pro Tyr Gln Gly Ser Ser Ala Val Tyr Thr Arg Arg Thr Arg His Thr
130 135 140

Pro Ser Ile Ile Phe Arg Thr His Glu Glu Ala Val Leu Ser Pro Ser
145 150 155 160

Ser Ser Ser Glu Asp Ala Gly Leu Pro Ser Tyr Glu Gln Ala Val Ala
165 170 175

Leu Thr Arg Lys His Ser Val Ser Pro Pro Pro Pro Tyr Pro Gly Pro
180 185 190

Ala Lys Gly Phe Arg Val Phe Lys Lys Ser Met Ser Leu Pro Ser His
195 200 205

<210> 356

<211> 95

<212> PRT

<213> Gerbil

<400> 356

Val Pro His Thr Arg Ser Leu Lys Asn Ser Glu His Ala Pro Glu Gly
1 5 10 15

Val Phe Ala Ser Lys Lys Ala Ala Ser Ile Phe Met His Arg Arg Leu
20 25 30

Leu Tyr Asn Arg Phe Asp Leu Glu Leu Phe Thr Pro Gly Asn Leu Glu
35 40 45

Arg Glu Cys Tyr Glu Glu Phe Cys Ser Tyr Glu Glu Ala Arg Glu Ile
50 55 60

Leu Gly Asp Asn Glu Glu Met Ile Thr Phe Trp Arg Glu Tyr Ser Val
65 70 75 80

Lys Gly Pro Thr Thr Arg Ser Asp Val Asn Lys Glu Lys Ile Asp
85 90 95

<210> 357

<211> 25

<212> PRT

<213> Gerbil

<400> 357

Val Met Gly Leu Leu Thr Gly Leu Ile Ala Ala Gly Val Phe Leu Val
1 5 10 15

Val Phe Gly Leu Leu Gly Tyr Tyr Leu

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25

<210> 358

<211> 88

<212> PRT

<213> Gerbil

<400> 358

Cys Ile Thr Lys Cys Asn Arg Gln Pro Tyr Gln Gly Ser Ser Ala Val
1 5 10 15

Tyr Thr Arg Arg Thr Arg His Thr Pro Ser Ile Ile Phe Arg Thr His
20 25 30

Glu Glu Ala Val Leu Ser Pro Ser Ser Ser Glu Asp Ala Gly Leu
35 40 45

Pro Ser Tyr Glu Gln Ala Val Ala Leu Thr Arg Lys His Ser Val Ser
50 55 60

Pro Pro Pro Pro Tyr Pro Gly Pro Ala Lys Gly Phe Arg Val Phe Lys
65 70 75 80

Lys Ser Met Ser Leu Pro Ser His
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<210> 359

<400> 359

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<210> 360

<400> 360

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<210> 361

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<210> 362

<211> 962

<212> DNA

<213> Mus sp.

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aagaacaggc tctacctgca caacaacccg ctgcctgtg actgcagccct ctaccacctg 180
ctccggcgct ggcaccagcg gggcctgagt gccctgcattg atttgaacg cgagtacaca 240
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aa 962

<210> 363
<211> 320
<212> PRT
<213> Mus sp.

<400> 363

Pro Phe Leu Phe Asn His Leu His Gly Leu Gly Leu Thr Arg Leu Arg
1 5 10 15

Thr Leu Asp Leu Ser Ser Asn Trp Leu Lys His Ile Ser Ile Pro Glu
20 25 30

Leu Ala Ala Leu Pro Thr Tyr Leu Lys Asn Arg Leu Tyr Leu His Asn
35 40 45

Asn Pro Leu Pro Cys Asp Cys Ser Leu Tyr His Leu Leu Arg Arg Trp
50 55 60

His Gln Arg Gly Leu Ser Ala Leu His Asp Phe Glu Arg Glu Tyr Thr
65 70 75 80

Cys Leu Val Phe Lys Val Ser Glu Ser Arg Val Arg Phe Phe Glu His
85 90 95

Ser Arg Val Phe Lys Asn Cys Ser Val Ala Ala Ala Pro Gly Leu Glu
100 105 110

Leu Pro Glu Glu Gln Leu His Ala Gln Val Gly Gln Ser Leu Arg Leu

GOLDEN GROVE

115	120	125
Phe Cys Asn Thr Ser Val Pro Ala Thr Arg Val Ala Trp Val Ser Pro		
130	135	140
Lys Asn Glu Leu Leu Val Ala Pro Ala Ser Gln Asp Gly Ser Ile Ala		
145	150	155
Val Leu Ala Asp Gly Ser Leu Ala Ile Gly Arg Val Gln Glu Gln His		
165	170	175
Ala Gly Val Phe Val Cys Leu Ala Ser Gly Pro Arg Leu His His Asn		
180	185	190
Gln Thr Leu Glu Tyr Asn Val Ser Val Gln Lys Ala Arg Pro Glu Pro		
195	200	205
Glu Thr Phe Asn Thr Gly Phe Thr Thr Leu Leu Gly Cys Ile Val Gly		
210	215	220
Leu Val Leu Val Leu Leu Tyr Leu Phe Ala Pro Pro Cys Arg Gly Cys		
225	230	235
240		
Cys His Cys Cys Gln Arg Ala Cys Arg Asn Arg Cys Trp Pro Arg Ala		
245	250	255
Ser Ser Pro Leu Gln Glu Leu Ser Ala Gln Ser Ser Met Leu Ser Thr		
260	265	270
Thr Pro Pro Asp Ala Pro Ser Arg Lys Ala Ser Val His Lys His Val		
275	280	285
Val Phe Leu Glu Pro Gly Lys Lys Gly Leu Asn Gly Arg Val Gln Leu		
290	295	300
Ala Val Pro Pro Asp Ser Asp Leu Cys Asn Pro Met Gly Leu Gln Leu		
305	310	315
320		

<210> 364

<211> 16

<212> PRT

<213> Mus sp.

<400> 364

TIGER ODEON

Pro Phe Leu Phe Asn His Leu His Gly Leu Gly Leu Thr Arg Leu Arg
1 5 10 15

<210> 365
<211> 304
<212> PRT
<213> Mus sp.

<400> 365
Thr Leu Asp Leu Ser Ser Asn Trp Leu Lys His Ile Ser Ile Pro Glu
1 5 10 15

Leu Ala Ala Leu Pro Thr Tyr Leu Lys Asn Arg Leu Tyr Leu His Asn
20 25 30

Asn Pro Leu Pro Cys Asp Cys Ser Leu Tyr His Leu Leu Arg Arg Trp
35 40 45

His Gln Arg Gly Leu Ser Ala Leu His Asp Phe Glu Arg Glu Tyr Thr
50 55 60

Cys Leu Val Phe Lys Val Ser Glu Ser Arg Val Arg Phe Phe Glu His
65 70 75 80

Ser Arg Val Phe Lys Asn Cys Ser Val Ala Ala Ala Pro Gly Leu Glu
85 90 95

Leu Pro Glu Glu Gln Leu His Ala Gln Val Gly Gln Ser Leu Arg Leu
100 105 110

Phe Cys Asn Thr Ser Val Pro Ala Thr Arg Val Ala Trp Val Ser Pro
115 120 125

Lys Asn Glu Leu Leu Val Ala Pro Ala Ser Gln Asp Gly Ser Ile Ala
130 135 140

Val Leu Ala Asp Gly Ser Leu Ala Ile Gly Arg Val Gln Glu Gln His
145 150 155 160

Ala Gly Val Phe Val Cys Leu Ala Ser Gly Pro Arg Leu His His Asn
165 170 175

Gln Thr Leu Glu Tyr Asn Val Ser Val Gln Lys Ala Arg Pro Glu Pro
180 185 190

Glu Thr Phe Asn Thr Gly Phe Thr Thr Leu Leu Gly Cys Ile Val Gly
195 200 205

Leu Val Leu Val Leu Leu Tyr Leu Phe Ala Pro Pro Cys Arg Gly Cys
210 215 220

Cys His Cys Cys Gln Arg Ala Cys Arg Asn Arg Cys Trp Pro Arg Ala
225 230 235 240

Ser Ser Pro Leu Gln Glu Leu Ser Ala Gln Ser Ser Met Leu Ser Thr
245 250 255

Thr Pro Pro Asp Ala Pro Ser Arg Lys Ala Ser Val His Lys His Val
260 265 270

Val Phe Leu Glu Pro Gly Lys Lys Gly Leu Asn Gly Arg Val Gln Leu
275 280 285

Ala Val Pro Pro Asp Ser Asp Leu Cys Asn Pro Met Gly Leu Gln Leu
290 295 300

<210> 366
<211> 197
<212> PRT
<213> Mus sp.

<400> 366
Thr Leu Asp Leu Ser Ser Asn Trp Leu Lys His Ile Ser Ile Pro Glu
1 5 10 15

Leu Ala Ala Leu Pro Thr Tyr Leu Lys Asn Arg Leu Tyr Leu His Asn
20 25 30

Asn Pro Leu Pro Cys Asp Cys Ser Leu Tyr His Leu Leu Arg Arg Trp
35 40 45

His Gln Arg Gly Leu Ser Ala Leu His Asp Phe Glu Arg Glu Tyr Thr
50 55 60

Cys Leu Val Phe Lys Val Ser Glu Ser Arg Val Arg Phe Phe Glu His
65 70 75 80

Ser Arg Val Phe Lys Asn Cys Ser Val Ala Ala Ala Pro Gly Leu Glu
85 90 95

Leu Pro Glu Glu Gln Leu His Ala Gln Val Gly Gln Ser Leu Arg Leu

DEPTSGAEG

100 105 110

Phe Cys Asn Thr Ser Val Pro Ala Thr Arg Val Ala Trp Val Ser Pro
115 120 125

Lys Asn Glu Leu Leu Val Ala Pro Ala Ser Gln Asp Gly Ser Ile Ala
130 135 140

Val Leu Ala Asp Gly Ser Leu Ala Ile Gly Arg Val Gln Glu Gln His
145 150 155 160

Ala Gly Val Phe Val Cys Leu Ala Ser Gly Pro Arg Leu His His Asn
165 170 175

Gln Thr Leu Glu Tyr Asn Val Ser Val Gln Lys Ala Arg Pro Glu Pro
180 185 190

Glu Thr Phe Asn Thr
195

<210> 367

<211> 20

<212> PRT

<213> Mus sp.

<400> 367

Gly Phe Thr Thr Leu Leu Gly Cys Ile Val Gly Leu Val Leu Val Leu
1 5 10 15

Leu Tyr Leu Phe
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<210> 368

<211> 87

<212> PRT

<213> Mus sp.

<400> 368

Ala Pro Pro Cys Arg Gly Cys Cys His Cys Cys Gln Arg Ala Cys Arg
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Asn Arg Cys Trp Pro Arg Ala Ser Ser Pro Leu Gln Glu Leu Ser Ala
20 25 30

Gln Ser Ser Met Leu Ser Thr Thr Pro Pro Asp Ala Pro Ser Arg Lys
35 40 45

Ala Ser Val His Lys His Val Val Phe Leu Glu Pro Gly Lys Lys Gly
50 55 60

Leu Asn Gly Arg Val Gln Leu Ala Val Pro Pro Asp Ser Asp Leu Cys
65 70 75 80

Asn Pro Met Gly Leu Gln Leu
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<210> 369
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR Primer

<400> 369
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<210> 370
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR Primer

<400> 370
cctcctgatt acctacaatg gtc 23

<210> 371
<211> 1656
<212> DNA
<213> Homo sapiens

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gatggagacg tgagccctg gtgctatgtg gcagagcacg aggatggtgt ctactggaag 360
tactgtgaga tacctgcttg ccagatgctt gctgctacaa ggatcatgga 420

DNA

aaccCACCTC ctctaactgg caccagtaaa acgtccaaca aactcaccat acaaacttgc 480
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ttctgtggaa acaatcctga ttactggaag tacggggagg cagccagtag cgaatgcaac 600
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<210> 372
<211> 1425
<212> DNA
<213> Homo sapiens

<400> 372
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<213> Homo sapiens

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35 40 45

Thr Ala Leu Gln Gly Gly Lys Pro Cys Leu Phe Trp Asn Glu Thr Phe
50 55 60

Gln His Pro Tyr Asn Thr Leu Lys Tyr Pro Asn Gly Glu Gly Gly Leu
65 70 75 80

Gly Glu His Asn Tyr Cys Arg Asn Pro Asp Gly Asp Val Ser Pro Trp
85 90 95

Cys Tyr Val Ala Glu His Glu Asp Gly Val Tyr Trp Lys Tyr Cys Glu
100 105 110

Ile Pro Ala Cys Gln Met Pro Gly Asn Leu Gly Cys Tyr Lys Asp His
115 120 125

Gly Asn Pro Pro Pro Leu Thr Gly Thr Ser Lys Thr Ser Asn Lys Leu
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Thr Ile Gln Thr Cys Ile Ser Phe Cys Arg Ser Gln Arg Phe Lys Phe
145 150 155 160

Ala Gly Met Glu Ser Gly Tyr Ala Cys Phe Cys Gly Asn Asn Pro Asp
165 170 175

Tyr Trp Lys Tyr Gly Glu Ala Ala Ser Thr Glu Cys Asn Ser Val Cys
180 185 190

Phe Gly Asp His Thr Gln Pro Cys Gly Gly Asp Gly Arg Ile Ile Leu
195 200 205

Phe Asp Thr Leu Val Gly Ala Cys Gly Gly Asn Tyr Ser Ala Met Ser
210 215 220

Ser Val Val Tyr Ser Pro Asp Phe Pro Asp Thr Tyr Ala Thr Gly Arg
225 230 235 240

Val Cys Tyr Trp Thr Ile Arg Val Pro Gly Ala Ser His Ile His Phe
245 250 255

Ser Phe Pro Leu Phe Asp Ile Arg Asp Ser Ala Asp Met Val Glu Leu
260 265 270

Leu Asp Gly Tyr Thr His Arg Val Leu Ala Arg Phe His Gly Arg Ser
275 280 285

Arg Pro Pro Leu Ser Phe Asn Val Ser Leu Asp Phe Val Ile Leu Tyr
290 295 300

Phe Phe Ser Asp Arg Ile Asn Gln Ala Gln Gly Phe Ala Val Leu Tyr
305 310 315 320

Gln Ala Val Lys Glu Glu Leu Pro Gln Glu Arg Pro Ala Val Asn Gln
325 330 335

Thr Val Ala Glu Val Ile Thr Glu Gln Ala Asn Leu Ser Val Ser Ala
340 345 350

Ala Arg Ser Ser Lys Val Leu Tyr Val Ile Thr Thr Ser Pro Ser His
355 360 365

Pro Pro Gln Thr Val Pro Gly Ser Asn Ser Trp Ala Pro Pro Met Gly
370 375 380

Ala Gly Ser His Arg Val Glu Gly Trp Thr Val Tyr Gly Leu Ala Thr
385 390 395 400

Leu Leu Ile Leu Thr Val Thr Ala Ile Val Ala Lys Ile Leu Leu His
405 410 415

Val Thr Phe Lys Ser His Arg Val Pro Ala Ser Gly Asp Leu Arg Asp
420 425 430

Cys His Gln Pro Gly Thr Ser Gly Glu Ile Trp Ser Ile Phe Tyr Lys
435 440 445

Pro Ser Thr Ser Ile Ser Ile Phe Lys Lys Lys Leu Lys Gly Gln Ser
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Gln Gln Asp Asp Arg Asn Pro Leu Val Ser Asp
465 470 475

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<213> Homo sapiens

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Thr Leu Ala

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<211> 456
<212> PRT
<213> Homo sapiens

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35 40 45

Tyr Asn Thr Leu Lys Tyr Pro Asn Gly Glu Gly Leu Gly Glu His
50 55 60

Asn Tyr Cys Arg Asn Pro Asp Gly Asp Val Ser Pro Trp Cys Tyr Val
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Ala Glu His Glu Asp Gly Val Tyr Trp Lys Tyr Cys Glu Ile Pro Ala
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Cys Gln Met Pro Gly Asn Leu Gly Cys Tyr Lys Asp His Gly Asn Pro
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Pro Pro Leu Thr Gly Thr Ser Lys Thr Ser Asn Lys Leu Thr Ile Gln
115 120 125

Thr Cys Ile Ser Phe Cys Arg Ser Gln Arg Phe Lys Phe Ala Gly Met
130 135 140

Glu Ser Gly Tyr Ala Cys Phe Cys Gly Asn Asn Pro Asp Tyr Trp Lys
145 150 155 160

Tyr Gly Glu Ala Ala Ser Thr Glu Cys Asn Ser Val Cys Phe Gly Asp
165 170 175

His Thr Gln Pro Cys Gly Gly Asp Gly Arg Ile Ile Leu Phe Asp Thr
180 185 190

Leu Val Gly Ala Cys Gly Gly Asn Tyr Ser Ala Met Ser Ser Val Val
195 200 205

Tyr Ser Pro Asp Phe Pro Asp Thr Tyr Ala Thr Gly Arg Val Cys Tyr
210 215 220

Trp Thr Ile Arg Val Pro Gly Ala Ser His Ile His Phe Ser Phe Pro
225 230 235 240

Leu Phe Asp Ile Arg Asp Ser Ala Asp Met Val Glu Leu Leu Asp Gly
245 250 255

Tyr Thr His Arg Val Leu Ala Arg Phe His Gly Arg Ser Arg Pro Pro
260 265 270

Leu Ser Phe Asn Val Ser Leu Asp Phe Val Ile Leu Tyr Phe Phe Ser
275 280 285

Asp Arg Ile Asn Gln Ala Gln Gly Phe Ala Val Leu Tyr Gln Ala Val
290 295 300

Lys Glu Glu Leu Pro Gln Glu Arg Pro Ala Val Asn Gln Thr Val Ala
305 310 315 320

Glu Val Ile Thr Glu Gln Ala Asn Leu Ser Val Ser Ala Ala Arg Ser
325 330 335

Ser Lys Val Leu Tyr Val Ile Thr Thr Ser Pro Ser His Pro Pro Gln
340 345 350

Thr Val Pro Gly Ser Asn Ser Trp Ala Pro Pro Met Gly Ala Gly Ser
355 360 365

TOE TOE TOE TOE

His Arg Val Glu Gly Trp Thr Val Tyr Gly Leu Ala Thr Leu Leu Ile
370 375 380

Leu Thr Val Thr Ala Ile Val Ala Lys Ile Leu Leu His Val Thr Phe
385 390 395 400

Lys Ser His Arg Val Pro Ala Ser Gly Asp Leu Arg Asp Cys His Gln
405 410 415

Pro Gly Thr Ser Gly Glu Ile Trp Ser Ile Phe Tyr Lys Pro Ser Thr
420 425 430

Ser Ile Ser Ile Phe Lys Lys Leu Lys Gly Gln Ser Gln Gln Asp
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Asp Arg Asn Pro Leu Val Ser Asp
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<210> 376

<211> 373

<212> PRT

<213> Homo sapiens

<400> 376

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Thr Ala Asn Gly Ala Asp Tyr Arg Gly Thr Gln Asn Trp Thr Ala Leu
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Gln Gly Gly Lys Pro Cys Leu Phe Trp Asn Glu Thr Phe Gln His Pro
35 40 45

Tyr Asn Thr Leu Lys Tyr Pro Asn Gly Glu Gly Leu Gly Glu His
50 55 60

Asn Tyr Cys Arg Asn Pro Asp Gly Asp Val Ser Pro Trp Cys Tyr Val
65 70 75 80

Ala Glu His Glu Asp Gly Val Tyr Trp Lys Tyr Cys Glu Ile Pro Ala
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Cys Gln Met Pro Gly Asn Leu Gly Cys Tyr Lys Asp His Gly Asn Pro
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Pro Pro Leu Thr Gly Thr Ser Lys Thr Ser Asn Lys Leu Thr Ile Gln
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Thr Cys Ile Ser Phe Cys Arg Ser Gln Arg Phe Lys Phe Ala Gly Met
130 135 140

Glu Ser Gly Tyr Ala Cys Phe Cys Gly Asn Asn Pro Asp Tyr Trp Lys
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Tyr Gly Glu Ala Ala Ser Thr Glu Cys Asn Ser Val Cys Phe Gly Asp
165 170 175

His Thr Gln Pro Cys Gly Gly Asp Gly Arg Ile Ile Leu Phe Asp Thr
180 185 190

Leu Val Gly Ala Cys Gly Gly Asn Tyr Ser Ala Met Ser Ser Val Val
195 200 205

Tyr Ser Pro Asp Phe Pro Asp Thr Tyr Ala Thr Gly Arg Val Cys Tyr
210 215 220

Trp Thr Ile Arg Val Pro Gly Ala Ser His Ile His Phe Ser Phe Pro
225 230 235 240

Leu Phe Asp Ile Arg Asp Ser Ala Asp Met Val Glu Leu Leu Asp Gly
245 250 255

Tyr Thr His Arg Val Leu Ala Arg Phe His Gly Arg Ser Arg Pro Pro
260 265 270

Leu Ser Phe Asn Val Ser Leu Asp Phe Val Ile Leu Tyr Phe Phe Ser
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Asp Arg Ile Asn Gln Ala Gln Gly Phe Ala Val Leu Tyr Gln Ala Val
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Lys Glu Glu Leu Pro Gln Glu Arg Pro Ala Val Asn Gln Thr Val Ala
305 310 315 320

Glu Val Ile Thr Glu Gln Ala Asn Leu Ser Val Ser Ala Ala Arg Ser
325 330 335

Ser Lys Val Leu Tyr Val Ile Thr Thr Ser Pro Ser His Pro Pro Gln
340 345 350

Thr Val Pro Gly Ser Asn Ser Trp Ala Pro Pro Met Gly Ala Gly Ser
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His Arg Val Glu Gly
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<211> 23
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Ile Val Ala Lys Ile Leu Leu
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<211> 60
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<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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gaagtgggtgt gtcagcagct gggctgtggc tctgctctgg ctgcctgag ggacgcgttcg 3900
tttggccagg qaactggaaac catctgttgc gatgacatgc ggtqcaaaagg aaatqagtca 3960

tttctatggg actgtcacgc caaaccctgg ggacagagtg actgtggaca caaggaagat 4020
gctggcgtga ggtgctctgg acagtgcgtg aaatcaactga atgcctcctc aggtcatata 4080
gcacttattt tatccagtagt ctgtggcgtc ctttcctgg ttctgtttat tctatttctc 4140
acgtggtgcc gagttcagaa acaaaaacat ctgcccctca qagtttcaac cagaaggagg 4200
ggttctctcg aggagaattt attccatgag atggagacct gcctcaagag agaggaccca 4260
catggaccaa gaacctcaga tgacaccccc aaccatggtt gtgaagatgc tagcgacaca 4320
tcgctgttgg gagttcttcc tgccctctgaa gccacaaaa 4359

<210> 381
<211> 1453
<212> PRT
<213> Homo sapiens

<400> 381

Met	Met	Leu	Pro	Gln	Asn	Ser	Trp	His	Ile	Asp	Phe	Gly	Arg	Cys	Cys
1									10					15	
Cys	His	Gln	Asn	Leu	Phe	Ser	Ala	Val	Val	Thr	Cys	Ile	Leu	Leu	Leu
		20						25					30		
Asn	Ser	Cys	Phe	Leu	Ile	Ser	Ser	Phe	Asn	Gly	Thr	Asp	Leu	Glu	Leu
		35				40					45				
Arg	Leu	Val	Asn	Gly	Asp	Gly	Pro	Cys	Ser	Gly	Thr	Val	Glu	Val	Lys
		50			55					60					
Phe	Gln	Gly	Gln	Trp	Gly	Thr	Val	Cys	Asp	Asp	Gly	Trp	Asn	Thr	Thr
		65			70			75					80		
Ala	Ser	Thr	Val	Val	Cys	Lys	Gln	Leu	Gly	Cys	Pro	Phe	Ser	Phe	Ala
		85				90					95				
Met	Phe	Arg	Phe	Gly	Gln	Ala	Val	Thr	Arg	His	Gly	Lys	Ile	Trp	Leu
		100					105					110			
Asp	Asp	Val	Ser	Cys	Tyr	Gly	Asn	Glu	Ser	Ala	Leu	Trp	Glu	Cys	Gln
		115				120					125				
His	Arg	Glu	Trp	Gly	Ser	His	Asn	Cys	Tyr	His	Gly	Glu	Asp	Val	Gly
		130				135				140					
Val	Asn	Cys	Tyr	Gly	Glu	Ala	Asn	Leu	Gly	Leu	Arg	Leu	Val	Asp	Gly
		145			150			155			160				
Asn	Asn	Ser	Cys	Ser	Gly	Arg	Val	Glu	Val	Lys	Phe	Gln	Glu	Arg	Trp
				165				170				175			

Gly Thr Ile Cys Asp Asp Gly Trp Asn Leu Asn Thr Ala Ala Val Val
180 185 190

Cys Arg Gln Leu Gly Cys Pro Ser Ser Phe Ile Ser Ser Gly Val Val
195 200 205

Asn Ser Pro Ala Val Leu Arg Pro Ile Trp Leu Asp Asp Ile Leu Cys
210 215 220

Gln Gly Asn Glu Leu Ala Leu Trp Asn Cys Arg His Arg Gly Trp Gly
225 230 235 240

Asn His Asp Cys Ser His Asn Glu Asp Val Thr Leu Thr Cys Tyr Asp
245 250 255

Ser Ser Asp Leu Glu Leu Arg Leu Val Gly Gly Thr Asn Arg Cys Met
260 265 270

Gly Arg Val Glu Leu Lys Ile Gln Gly Arg Trp Gly Thr Val Cys His
275 280 285

His Lys Trp Asn Asn Ala Ala Ala Asp Val Val Cys Lys Gln Leu Gly
290 295 300

Cys Gly Thr Ala Leu His Phe Ala Gly Leu Pro His Leu Gln Ser Gly
305 310 315 320

Ser Asp Val Val Trp Leu Asp Gly Val Ser Cys Ser Gly Asn Glu Ser
325 330 335

Phe Leu Trp Asp Cys Arg His Ser Gly Thr Val Asn Phe Asp Cys Leu
340 345 350

His Gln Asn Asp Val Ser Val Ile Cys Ser Asp Gly Ala Asp Leu Glu
355 360 365

Leu Arg Leu Ala Asp Gly Ser Asn Asn Cys Ser Gly Arg Val Glu Val
370 375 380

Arg Ile His Glu Gln Trp Trp Thr Ile Cys Asp Gln Asn Trp Lys Asn
385 390 395 400

Glu Gln Ala Leu Val Val Cys Lys Gln Leu Gly Cys Pro Phe Ser Val
405 410 415

Phe Gly Ser Arg Arg Ala Lys Pro Ser Asn Glu Ala Arg Asp Ile Trp
420 425 430

Ile Asn Ser Ile Ser Cys Thr Gly Asn Glu Ser Ala Leu Trp Asp Cys
435 440 445

Thr Tyr Asp Gly Lys Ala Lys Arg Thr Cys Phe Arg Arg Ser Asp Ala
450 455 460

Gly Val Ile Cys Ser Asp Lys Ala Asp Leu Asp Leu Arg Leu Val Gly
465 470 475 480

Ala His Ser Pro Cys Tyr Gly Arg Leu Glu Val Lys Tyr Gln Gly Glu
485 490 495

Trp Gly Thr Val Cys His Asp Arg Trp Ser Thr Arg Asn Ala Ala Val
500 505 510

Val Cys Lys Gln Leu Gly Cys Gly Lys Pro Met His Val Phe Gly Met
515 520 525

Thr Tyr Phe Lys Glu Ala Ser Gly Pro Ile Trp Leu Asp Asp Val Ser
530 535 540

Cys Ile Gly Asn Glu Ser Asn Ile Trp Asp Cys Glu His Ser Gly Trp
545 550 555 560

Gly Lys His Asn Cys Val His Arg Glu Asp Val Ile Val Thr Cys Ser
565 570 575

Gly Asp Ala Thr Trp Gly Leu Arg Leu Val Gly Ser Asn Arg Cys
580 585 590

Ser Gly Arg Leu Glu Val Tyr Phe Gln Gly Arg Trp Gly Thr Val Cys
595 600 605

Asp Asp Gly Trp Asn Ser Lys Ala Ala Val Val Cys Ser Gln Leu
610 615 620

Asp Cys Pro Ser Ser Ile Ile Gly Met Gly Leu Gly Asn Ala Ser Thr
625 630 635 640

Gly Tyr Gly Lys Ile Trp Leu Asp Asp Val Ser Cys Asp Gly Asp Glu
645 650 655

Ser Asp Leu Trp Ser Cys Arg Asn Ser Gly Trp Gly Asn Asn Asp Cys
660 665 670

Ser His Ser Glu Asp Val Gly Val Ile Cys Ser Asp Ala Ser Asp Met
675 680 685

Glu Leu Arg Leu Val Gly Gly Ser Ser Arg Cys Ala Gly Lys Val Glu
690 695 700

Val Asn Val Gln Gly Ala Val Gly Ile Leu Cys Ala Asn Gly Trp Gly
705 710 715 720

Met Asn Ile Ala Glu Val Val Cys Arg Gln Leu Glu Cys Gly Ser Ala
725 730 735

Ile Arg Val Ser Arg Glu Pro His Phe Thr Glu Arg Thr Leu His Ile
740 745 750

Leu Met Ser Asn Ser Gly Cys Thr Gly Gly Glu Ala Ser Leu Trp Asp
755 760 765

Cys Ile Arg Trp Glu Trp Lys Gln Thr Ala Cys His Leu Asn Met Glu
770 775 780

Ala Ser Leu Ile Cys Ser Ala His Arg Gln Pro Arg Leu Val Gly Ala
785 790 795 800

Asp Met Pro Cys Ser Gly Arg Val Glu Val Lys His Ala Asp Thr Trp
805 810 815

Arg Ser Val Cys Asp Ser Asp Phe Ser Leu His Ala Ala Asn Val Leu
820 825 830

Cys Arg Glu Leu Asn Cys Gly Asp Ala Ile Ser Leu Ser Val Gly Asp
835 840 845

His Phe Gly Lys Gly Asn Gly Leu Thr Trp Ala Glu Lys Phe Gln Cys
850 855 860

Glu Gly Ser Glu Thr His Leu Ala Leu Cys Pro Ile Val Gln His Pro
865 870 875 880

Glu Asp Thr Cys Ile His Ser Arg Glu Val Gly Val Val Cys Ser Arg
885 890 895

Tyr Thr Asp Val Arg Leu Val Asn Gly Lys Ser Gln Cys Asp Gly Gln
900 905 910

Val Glu Ile Asn Val Leu Gly His Trp Gly Ser Leu Cys Asp Thr His
915 920 925

Trp Asp Pro Glu Asp Ala Arg Val Leu Cys Arg Gln Leu Ser Cys Gly
930 935 940

Thr Ala Leu Ser Thr Thr Gly Gly Lys Tyr Ile Gly Glu Arg Ser Val
945 950 955 960

Arg Val Trp Gly His Arg Phe His Cys Leu Gly Asn Glu Ser Leu Leu
965 970 975

Asp Asn Cys Gln Met Thr Val Leu Gly Ala Pro Pro Cys Ile His Gly
980 985 990

Asn Thr Val Ser Val Ile Cys Thr Gly Ser Leu Thr Gln Pro Leu Phe
995 1000 1005

Pro Cys Leu Ala Asn Val Ser Asp Pro Tyr Leu Ser Ala Val Pro Glu
1010 1015 1020

Gly Ser Ala Leu Ile Cys Leu Glu Asp Lys Arg Leu Arg Leu Val Asp
1025 1030 1035 1040

Gly Asp Ser Arg Cys Ala Gly Arg Val Glu Ile Tyr His Asp Gly Phe
1045 1050 1055

Trp Gly Thr Ile Cys Asp Asp Gly Trp Asp Leu Ser Asp Ala His Val
1060 1065 1070

Val Cys Gln Lys Leu Gly Cys Gly Val Ala Phe Asn Ala Thr Val Ser
1075 1080 1085

Ala His Phe Gly Glu Gly Ser Gly Pro Ile Trp Leu Asp Asp Leu Asn
1090 1095 1100

Cys Thr Gly Thr Glu Ser His Leu Trp Gln Cys Pro Ser Arg Gly Trp
1105 1110 1115 1120

Gly Gln His Asp Cys Arg His Lys Glu Asp Ala Gly Val Ile Cys Ser
1125 1130 1135

Glu Phe Thr Ala Leu Arg Leu Tyr Ser Glu Thr Glu Thr Glu Ser Cys
1140 1145 1150

Ala Gly Arg Leu Glu Val Phe Tyr Asn Gly Thr Trp Gly Ser Val Gly
1155 1160 1165

Arg Arg Asn Ile Thr Thr Ala Ile Ala Gly Ile Val Cys Arg Gln Leu
1170 1175 1180

Gly Cys Gly Glu Asn Gly Val Val Ser Leu Ala Pro Leu Ser Lys Thr
1185 1190 1195 1200

Gly Ser Gly Phe Met Trp Val Asp Asp Ile Gln Cys Pro Lys Thr His
1205 1210 1215

Ile Ser Ile Trp Gln Cys Lou Ser Ala Pro Trp Glu Arg Arg Ile Ser
1220 1225 1230

Ser Pro Ala Glu Glu Thr Trp Ile Thr Cys Glu Asp Arg Ile Arg Val
1235 1240 1245

Arg Gly Gly Asp Thr Glu Cys Ser Gly Arg Val Glu Ile Trp His Ala
1250 1255 1260

Gly Ser Trp Gly Thr Val Cys Asp Asp Ser Trp Asp Leu Ala Glu Ala
1265 1270 1275 1280

Glu Val Val Cys Gln Gln Leu Gly Cys Gly Ser Ala Leu Ala Ala Leu
1285 1290 1295

Arg Asp Ala Ser Phe Gly Gln Gly Thr Gly Thr Ile Trp Leu Asp Asp
1300 1305 1310

Met Arg Cys Lys Gly Asn Glu Ser Phe Leu Trp Asp Cys His Ala Lys
1315 1320 1325

Pro Trp Gly Gln Ser Asp Cys Gly His Lys Glu Asp Ala Gly Val Arg
1330 1335 1340

Cys Ser Gly Gln Ser Leu Lys Ser Leu Asn Ala Ser Ser Gly His Leu
1345 1350 1355 1360

Ala Leu Ile Leu Ser Ser Ile Phe Gly Leu Leu Leu Val Leu Phe
1365 1370 1375

Ile Leu Phe Leu Thr Trp Cys Arg Val Gln Lys Gln Lys His Leu Pro
1380 1385 1390

Leu Arg Val Ser Thr Arg Arg Gly Ser Leu Glu Glu Asn Leu Phe
1395 1400 1405

His Glu Met Glu Thr Cys Leu Lys Arg Glu Asp Pro His Gly Thr Arg
1410 1415 1420

Thr Ser Asp Asp Thr Pro Asn His Gly Cys Glu Asp Ala Ser Asp Thr
1425 1430 1435 1440

Ser Leu Leu Gly Val Leu Pro Ala Ser Glu Ala Thr Lys
1445 1450

<210> 382
<211> 40
<212> PRT
<213> Homo sapiens

<400> 382
Met Met Leu Pro Gln Asn Ser Trp His Ile Asp Phe Gly Arg Cys Cys
1 5 10 15

Cys His Gln Asn Leu Phe Ser Ala Val Val Thr Cys Ile Leu Leu Leu
20 25 30

Asn Ser Cys Phe Leu Ile Ser Ser
35 40

<210> 383
<211> 1413
<212> PRT
<213> Homo sapiens

<400> 383
Phe Asn Gly Thr Asp Leu Glu Leu Arg Leu Val Asn Gly Asp Gly Pro
1 5 10 15

Cys Ser Gly Thr Val Glu Val Lys Phe Gln Gly Gln Trp Gly Thr Val
20 25 30

Cys Asp Asp Gly Trp Asn Thr Thr Ala Ser Thr Val Val Cys Lys Gln
35 40 45

Leu Gly Cys Pro Phe Ser Phe Ala Met Phe Arg Phe Gly Gln Ala Val
50 55 60

Thr Arg His Gly Lys Ile Trp Leu Asp Asp Val Ser Cys Tyr Gly Asn
65 70 75 80

Glu Ser Ala Leu Trp Glu Cys Gln His Arg Glu Trp Gly Ser His Asn
85 90 95

Cys Tyr His Gly Glu Asp Val Gly Val Asn Cys Tyr Gly Glu Ala Asn
100 105 110

Leu Gly Leu Arg Leu Val Asp Gly Asn Asn Ser Cys Ser Gly Arg Val
115 120 125

Glu Val Lys Phe Gln Glu Arg Trp Gly Thr Ile Cys Asp Asp Gly Trp

PDB ID: 1J00

130	135	140
Asn Leu Asn Thr Ala Ala Val Val Cys Arg Gln Leu Gly Cys Pro Ser		
145	150	155
Ser Phe Ile Ser Ser Gly Val Val Asn Ser Pro Ala Val Leu Arg Pro		
165	170	175
Ile Trp Leu Asp Asp Ile Leu Cys Gln Gly Asn Glu Leu Ala Leu Trp		
180	185	190
Asn Cys Arg His Arg Gly Trp Gly Asn His Asp Cys Ser His Asn Glu		
195	200	205
Asp Val Thr Leu Thr Cys Tyr Asp Ser Ser Asp Leu Glu Leu Arg Leu		
210	215	220
Val Gly Gly Thr Asn Arg Cys Met Gly Arg Val Glu Leu Lys Ile Gln		
225	230	235
Gly Arg Trp Gly Thr Val Cys His His Lys Trp Asn Asn Ala Ala Ala		
245	250	255
Asp Val Val Cys Lys Gln Leu Gly Cys Gly Thr Ala Leu His Phe Ala		
260	265	270
Gly Leu Pro His Leu Gln Ser Gly Ser Asp Val Val Trp Leu Asp Gly		
275	280	285
Val Ser Cys Ser Gly Asn Glu Ser Phe Leu Trp Asp Cys Arg His Ser		
290	295	300
Gly Thr Val Asn Phe Asp Cys Leu His Gln Asn Asp Val Ser Val Ile		
305	310	315
Cys Ser Asp Gly Ala Asp Leu Glu Leu Arg Leu Ala Asp Gly Ser Asn		
325	330	335
Asn Cys Ser Gly Arg Val Glu Val Arg Ile His Glu Gln Trp Trp Thr		
340	345	350
Ile Cys Asp Gln Asn Trp Lys Asn Glu Gln Ala Leu Val Val Cys Lys		
355	360	365
Gln Leu Gly Cys Pro Phe Ser Val Phe Gly Ser Arg Arg Ala Lys Pro		
370	375	380
Ser Asn Glu Ala Arg Asp Ile Trp Ile Asn Ser Ile Ser Cys Thr Gly		

385 390 395 400
Asn Glu Ser Ala Leu Trp Asp Cys Thr Tyr Asp Gly Lys Ala Lys Arg
405 410 415

Thr Cys Phe Arg Arg Ser Asp Ala Gly Val Ile Cys Ser Asp Lys Ala
420 425 430

Asp Leu Asp Leu Arg Leu Val Gly Ala His Ser Pro Cys Tyr Gly Arg
435 440 445

Leu Glu Val Lys Tyr Gln Gly Glu Trp Gly Thr Val Cys His Asp Arg
450 455 460

Trp Ser Thr Arg Asn Ala Ala Val Val Cys Lys Gln Leu Gly Cys Gly
465 470 475 480

Lys Pro Met His Val Phe Gly Met Thr Tyr Phe Lys Glu Ala Ser Gly
485 490 495

Pro Ile Trp Leu Asp Asp Val Ser Cys Ile Gly Asn Glu Ser Asn Ile
500 505 510

Trp Asp Cys Glu His Ser Gly Trp Gly Lys His Asn Cys Val His Arg
515 520 525

Glu Asp Val Ile Val Thr Cys Ser Gly Asp Ala Thr Trp Gly Leu Arg
530 535 540

Leu Val Gly Gly Ser Asn Arg Cys Ser Gly Arg Leu Glu Val Tyr Phe
545 550 555 560

Gln Gly Arg Trp Gly Thr Val Cys Asp Asp Gly Trp Asn Ser Lys Ala
565 570 575

Ala Ala Val Val Cys Ser Gln Leu Asp Cys Pro Ser Ser Ile Ile Gly
580 585 590

Met Gly Leu Gly Asn Ala Ser Thr Gly Tyr Gly Lys Ile Trp Leu Asp
595 600 605

Asp Val Ser Cys Asp Gly Asp Glu Ser Asp Leu Trp Ser Cys Arg Asn
610 615 620

Ser Gly Trp Gly Asn Asn Asp Cys Ser His Ser Glu Asp Val Gly Val
625 630 635 640

Ile Cys Ser Asp Ala Ser Asp Met Glu Leu Arg Leu Val Gly Gly Ser

DRAFT

645	650	655
Ser Arg Cys Ala Gly Lys Val Glu Val Asn Val Gln Gly Ala Val Gly		
660	665	670
Ile Leu Cys Ala Asn Gly Trp Gly Met Asn Ile Ala Glu Val Val Cys		
675	680	685
Arg Gln Leu Glu Cys Gly Ser Ala Ile Arg Val Ser Arg Glu Pro His		
690	695	700
Phe Thr Glu Arg Thr Leu His Ile Leu Met Ser Asn Ser Gly Cys Thr		
705	710	715
720		
Gly Gly Glu Ala Ser Leu Trp Asp Cys Ile Arg Trp Glu Trp Lys Gln		
725	730	735
Thr Ala Cys His Leu Asn Met Glu Ala Ser Leu Ile Cys Ser Ala His		
740	745	750
Arg Gln Pro Arg Leu Val Gly Ala Asp Met Pro Cys Ser Gly Arg Val		
755	760	765
Glu Val Lys His Ala Asp Thr Trp Arg Ser Val Cys Asp Ser Asp Phe		
770	775	780
Ser Leu His Ala Ala Asn Val Leu Cys Arg Glu Leu Asn Cys Gly Asp		
785	790	795
800		
Ala Ile Ser Leu Ser Val Gly Asp His Phe Gly Lys Gly Asn Gly Leu		
805	810	815
Thr Trp Ala Glu Lys Phe Gln Cys Glu Gly Ser Glu Thr His Leu Ala		
820	825	830
Leu Cys Pro Ile Val Gln His Pro Glu Asp Thr Cys Ile His Ser Arg		
835	840	845
Glu Val Gly Val Val Cys Ser Arg Tyr Thr Asp Val Arg Leu Val Asn		
850	855	860
Gly Lys Ser Gln Cys Asp Gly Gln Val Glu Ile Asn Val Leu Gly His		
865	870	875
880		
Trp Gly Ser Leu Cys Asp Thr His Trp Asp Pro Glu Asp Ala Arg Val		
885	890	895
Leu Cys Arg Gln Leu Ser Cys Gly Thr Ala Leu Ser Thr Thr Gly Gly		

900 905 910

Lys Tyr Ile Gly Glu Arg Ser Val Arg Val Trp Gly His Arg Phe His
915 920 925

Cys Leu Gly Asn Glu Ser Leu Leu Asp Asn Cys Gln Met Thr Val Leu
930 935 940

Gly Ala Pro Pro Cys Ile His Gly Asn Thr Val Ser Val Ile Cys Thr
945 950 955 960

Gly Ser Leu Thr Gln Pro Leu Phe Pro Cys Leu Ala Asn Val Ser Asp
965 970 975

Pro Tyr Leu Ser Ala Val Pro Glu Gly Ser Ala Leu Ile Cys Leu Glu
980 985 990

Asp Lys Arg Leu Arg Leu Val Asp Gly Asp Ser Arg Cys Ala Gly Arg
995 1000 1005

Val Glu Ile Tyr His Asp Gly Phe Trp Gly Thr Ile Cys Asp Asp Gly
1010 1015 1020

Trp Asp Leu Ser Asp Ala His Val Val Cys Gln Lys Leu Gly Cys Gly
1025 1030 1035 1040

Val Ala Phe Asn Ala Thr Val Ser Ala His Phe Gly Glu Gly Ser Gly
1045 1050 1055

Pro Ile Trp Leu Asp Asp Leu Asn Cys Thr Gly Thr Glu Ser His Leu
1060 1065 1070

Trp Gln Cys Pro Ser Arg Gly Trp Gly Gln His Asp Cys Arg His Lys
1075 1080 1085

Glu Asp Ala Gly Val Ile Cys Ser Glu Phe Thr Ala Leu Arg Leu Tyr
1090 1095 1100

Ser Glu Thr Glu Thr Glu Ser Cys Ala Gly Arg Leu Glu Val Phe Tyr
1105 1110 1115 1120

Asn Gly Thr Trp Gly Ser Val Gly Arg Arg Asn Ile Thr Thr Ala Ile
1125 1130 1135

Ala Gly Ile Val Cys Arg Gln Leu Gly Cys Gly Glu Asn Gly Val Val
1140 1145 1150

Ser Leu Ala Pro Leu Ser Lys Thr Gly Ser Gly Phe Met Trp Val Asp

1155 1160 1165

Asp Ile Gln Cys Pro Lys Thr His Ile Ser Ile Trp Gln Cys Leu Ser
1170 1175 1180

Ala Pro Trp Glu Arg Arg Ile Ser Ser Pro Ala Glu Glu Thr Trp Ile
1185 1190 1195 1200

Thr Cys Glu Asp Arg Ile Arg Val Arg Gly Gly Asp Thr Glu Cys Ser
1205 1210 1215

Gly Arg Val Glu Ile Trp His Ala Gly Ser Trp Gly Thr Val Cys Asp
1220 1225 1230

Asp Ser Trp Asp Leu Ala Glu Ala Glu Val Val Cys Gln Gln Leu Gly
1235 1240 1245

Cys Gly Ser Ala Leu Ala Ala Leu Arg Asp Ala Ser Phe Gly Gln Gly
1250 1255 1260

Thr Gly Thr Ile Trp Leu Asp Asp Met Arg Cys Lys Gly Asn Glu Ser
1265 1270 1275 1280

Phe Leu Trp Asp Cys His Ala Lys Pro Trp Gly Gln Ser Asp Cys Gly
1285 1290 1295

His Lys Glu Asp Ala Gly Val Arg Cys Ser Gly Gln Ser Leu Lys Ser
1300 1305 1310

Leu Asn Ala Ser Ser Gly His Leu Ala Leu Ile Leu Ser Ser Ile Phe
1315 1320 1325

Gly Leu Leu Leu Leu Val Leu Phe Ile Leu Phe Leu Thr, Trp Cys Arg
1330 1335 1340

Val Gln Lys Gln Lys His Leu Pro Leu Arg Val Ser Thr Arg Arg Arg
1345 1350 1355 1360

Gly Ser Leu Glu Glu Asn Leu Phe His Glu Met Glu Thr Cys Leu Lys
1365 1370 1375

Arg Glu Asp Pro His Gly Thr Arg Thr Ser Asp Asp Thr Pro Asn His
1380 1385 1390

Gly Cys Glu Asp Ala Ser Asp Thr Ser Leu Leu Gly Val Leu Pro Ala
1395 1400 1405

Ser Glu Ala Thr Lys

1410

<210> 384

<211> 1319

<212> PRT

<213> Homo sapiens

<400> 384

Phe Asn Gly Thr Asp Leu Glu Leu Arg Leu Val Asn Gly Asp Gly Pro
1 5 10 15

Cys Ser Gly Thr Val Glu Val Lys Phe Gln Gly Gln Trp Gly Thr Val
20 25 30

Cys Asp Asp Gly Trp Asn Thr Thr Ala Ser Thr Val Val Cys Lys Gln
35 40 45

Leu Gly Cys Pro Phe Ser Phe Ala Met Phe Arg Phe Gly Gln Ala Val
50 55 60

Thr Arg His Gly Lys Ile Trp Leu Asp Asp Val Ser Cys Tyr Gly Asn
65 70 75 80

Glu Ser Ala Leu Trp Glu Cys Gln His Arg Glu Trp Gly Ser His Asn
85 90 95

Cys Tyr His Gly Glu Asp Val Gly Val Asn Cys Tyr Gly Glu Ala Asn
100 105 110

Leu Gly Leu Arg Leu Val Asp Gly Asn Asn Ser Cys Ser Gly Arg Val
115 120 125

Glu Val Lys Phe Gln Glu Arg Trp Gly Thr Ile Cys Asp Asp Gly Trp
130 135 140

Asn Leu Asn Thr Ala Ala Val Val Cys Arg Gln Leu Gly Cys Pro Ser
145 150 155 160

Ser Phe Ile Ser Ser Gly Val Val Asn Ser Pro Ala Val Leu Arg Pro
165 170 175

Ile Trp Leu Asp Asp Ile Leu Cys Gln Gly Asn Glu Leu Ala Leu Trp
180 185 190

Asn Cys Arg His Arg Gly Trp Gly Asn His Asp Cys Ser His Asn Glu
195 200 205

Asp Val Thr Leu Thr Cys Tyr Asp Ser Ser Asp Leu Glu Leu Arg Leu
210 215 220

Val Gly Gly Thr Asn Arg Cys Met Gly Arg Val Glu Leu Lys Ile Gln
225 230 235 240

Gly Arg Trp Gly Thr Val Cys His His Lys Trp Asn Asn Ala Ala Ala
245 250 255

Asp Val Val Cys Lys Gln Leu Gly Cys Gly Thr Ala Leu His Phe Ala
260 265 270

Gly Leu Pro His Leu Gln Ser Gly Ser Asp Val Val Trp Leu Asp Gly
275 280 285

Val Ser Cys Ser Gly Asn Glu Ser Phe Leu Trp Asp Cys Arg His Ser
290 295 300

Gly Thr Val Asn Phe Asp Cys Leu His Gln Asn Asp Val Ser Val Ile
305 310 315 320

Cys Ser Asp Gly Ala Asp Leu Glu Leu Arg Leu Ala Asp Gly Ser Asn
325 330 335

Asn Cys Ser Gly Arg Val Glu Val Arg Ile His Glu Gln Trp Trp Thr
340 345 350

Ile Cys Asp Gln Asn Trp Lys Asn Glu Gln Ala Leu Val Val Cys Lys
355 360 365

Gln Leu Gly Cys Pro Phe Ser Val Phe Gly Ser Arg Arg Ala Lys Pro
370 375 380

Ser Asn Glu Ala Arg Asp Ile Trp Ile Asn Ser Ile Ser Cys Thr Gly
385 390 395 400

Asn Glu Ser Ala Leu Trp Asp Cys Thr Tyr Asp Gly Lys Ala Lys Arg
405 410 415

Thr Cys Phe Arg Arg Ser Asp Ala Gly Val Ile Cys Ser Asp Lys Ala
420 425 430

Asp Leu Asp Leu Arg Leu Val Gly Ala His Ser Pro Cys Tyr Gly Arg
435 440 445

Leu Glu Val Lys Tyr Gln Gly Glu Trp Gly Thr Val Cys His Asp Arg
450 455 460

Trp Ser Thr Arg Asn Ala Ala Val Val Cys Lys Gln Leu Gly Cys Gly
465 470 475 480

Lys Pro Met His Val Phe Gly Met Thr Tyr Phe Lys Glu Ala Ser Gly
485 490 495

Pro Ile Trp Leu Asp Asp Val Ser Cys Ile Gly Asn Glu Ser Asn Ile
500 505 510

Trp Asp Cys Glu His Ser Gly Trp Gly Lys His Asn Cys Val His Arg
515 520 525

Glu Asp Val Ile Val Thr Cys Ser Gly Asp Ala Thr Trp Gly Leu Arg
530 535 540

Leu Val Gly Gly Ser Asn Arg Cys Ser Gly Arg Leu Glu Val Tyr Phe
545 550 555 560

Gln Gly Arg Trp Gly Thr Val Cys Asp Asp Gly Trp Asn Ser Lys Ala
565 570 575

Ala Ala Val Val Cys Ser Gln Leu Asp Cys Pro Ser Ser Ile Ile Gly
580 585 590

Met Gly Leu Gly Asn Ala Ser Thr Gly Tyr Gly Lys Ile Trp Leu Asp
595 600 605

Asp Val Ser Cys Asp Gly Asp Glu Ser Asp Leu Trp Ser Cys Arg Asn
610 615 620

Ser Gly Trp Gly Asn Asn Asp Cys Ser His Ser Glu Asp Val Gly Val
625 630 635 640

Ile Cys Ser Asp Ala Ser Asp Met Glu Leu Arg Leu Val Gly Gly Ser
645 650 655

Ser Arg Cys Ala Gly Lys Val Glu Val Asn Val Gln Gly Ala Val Gly
660 665 670

Ile Leu Cys Ala Asn Gly Trp Gly Met Asn Ile Ala Glu Val Val Cys
675 680 685

Arg Gln Leu Glu Cys Gly Ser Ala Ile Arg Val Ser Arg Glu Pro His
690 695 700

Phe Thr Glu Arg Thr Leu His Ile Leu Met Ser Asn Ser Gly Cys Thr
705 710 715 720

Gly Gly Glu Ala Ser Leu Trp Asp Cys Ile Arg Trp Glu Trp Lys Gln
725 730 735

Thr Ala Cys His Leu Asn Met Glu Ala Ser Leu Ile Cys Ser Ala His
740 745 750

Arg Gln Pro Arg Leu Val Gly Ala Asp Met Pro Cys Ser Gly Arg Val
755 760 765

Glu Val Lys His Ala Asp Thr Trp Arg Ser Val Cys Asp Ser Asp Phe
770 775 780

Ser Leu His Ala Ala Asn Val Leu Cys Arg Glu Leu Asn Cys Gly Asp
785 790 795 800

Ala Ile Ser Leu Ser Val Gly Asp His Phe Gly Lys Gly Asn Gly Leu
805 810 815

Thr Trp Ala Glu Lys Phe Gln Cys Glu Gly Ser Glu Thr His Leu Ala
820 825 830

Leu Cys Pro Ile Val Gln His Pro Glu Asp Thr Cys Ile His Ser Arg
835 840 845

Glu Val Gly Val Val Cys Ser Arg Tyr Thr Asp Val Arg Leu Val Asn
850 855 860

Gly Lys Ser Gln Cys Asp Gly Gln Val Glu Ile Asn Val Leu Gly His
865 870 875 880

Trp Gly Ser Leu Cys Asp Thr His Trp Asp Pro Glu Asp Ala Arg Val
885 890 895

Leu Cys Arg Gln Leu Ser Cys Gly Thr Ala Leu Ser Thr Thr Gly Gly
900 905 910

Lys Tyr Ile Gly Glu Arg Ser Val Arg Val Trp Gly His Arg Phe His
915 920 925

Cys Leu Gly Asn Glu Ser Leu Leu Asp Asn Cys Gln Met Thr Val Leu
930 935 940

Gly Ala Pro Pro Cys Ile His Gly Asn Thr Val Ser Val Ile Cys Thr
945 950 955 960

Gly Ser Leu Thr Gln Pro Leu Phe Pro Cys Leu Ala Asn Val Ser Asp
965 970 975

Pro Tyr Leu Ser Ala Val Pro Glu Gly Ser Ala Leu Ile Cys Leu Glu
980 985 990

Asp Lys Arg Leu Arg Leu Val Asp Gly Asp Ser Arg Cys Ala Gly Arg
995 1000 1005

Val Glu Ile Tyr His Asp Gly Phe Trp Gly Thr Ile Cys Asp Asp Gly
1010 1015 1020

Trp Asp Leu Ser Asp Ala His Val Val Cys Gln Lys Leu Gly Cys Gly
1025 1030 1035 1040

Val Ala Phe Asn Ala Thr Val Ser Ala His Phe Gly Glu Gly Ser Gly
1045 1050 1055

Pro Ile Trp Leu Asp Asp Leu Asn Cys Thr Gly Thr Glu Ser His Leu
1060 1065 1070

Trp Gln Cys Pro Ser Arg Gly Trp Gly Gln His Asp Cys Arg His Lys
1075 1080 1085

Glu Asp Ala Gly Val Ile Cys Ser Glu Phe Thr Ala Leu Arg Leu Tyr
1090 1095 1100

Ser Glu Thr Glu Thr Glu Ser Cys Ala Gly Arg Leu Glu Val Phe Tyr
1105 1110 1115 1120

Asn Gly Thr Trp Gly Ser Val Gly Arg Arg Asn Ile Thr Thr Ala Ile
1125 1130 1135

Ala Gly Ile Val Cys Arg Gln Leu Gly Cys Gly Glu Asn Gly Val Val
1140 1145 1150

Ser Leu Ala Pro Leu Ser Lys Thr Gly Ser Gly Phe Met Trp Val Asp
1155 1160 1165

Asp Ile Gln Cys Pro Lys Thr His Ile Ser Ile Trp Gln Cys Leu Ser
1170 1175 1180

Ala Pro Trp Glu Arg Arg Ile Ser Ser Pro Ala Glu Glu Thr Trp Ile
1185 1190 1195 1200

Thr Cys Glu Asp Arg Ile Arg Val Arg Gly Gly Asp Thr Glu Cys Ser
1205 1210 1215

Gly Arg Val Glu Ile Trp His Ala Gly Ser Trp Gly Thr Val Cys Asp
1220 1225 1230

Asp Ser Trp Asp Leu Ala Glu Ala Glu Val Val Cys Gln Gln Leu Gly
1235 1240 1245

Cys Gly Ser Ala Leu Ala Ala Leu Arg Asp Ala Ser Phe Gly Gln Gly
1250 1255 1260

Thr Gly Thr Ile Trp Leu Asp Asp Met Arg Cys Lys Gly Asn Glu Ser
1265 1270 1275 1280

Phe Leu Trp Asp Cys His Ala Lys Pro Trp Gly Gln Ser Asp Cys Gly
1285 1290 1295

His Lys Glu Asp Ala Gly Val Arg Cys Ser Gly Gln Ser Leu Lys Ser
1300 1305 1310

Leu Asn Ala Ser Ser Gly His
1315

<210> 385

<211> 24

<212> PRT

<213> Homo sapiens

<400> 385

Leu Ala Leu Ile Leu Ser Ser Ile Phe Gly Leu Leu Leu Leu Val Leu
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Phe Ile Leu Phe Leu Thr Trp Cys
20

<210> 386

<211> 70

<212> PRT

<213> Homo sapiens

<400> 386

Arg Val Gln Lys Gln Lys His Leu Pro Leu Arg Val Ser Thr Arg Arg
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Arg Gly Ser Leu Glu Glu Asn Leu Phe His Glu Met Glu Thr Cys Leu
20 25 30

Lys Arg Glu Asp Pro His Gly Thr Arg Thr Ser Asp Asp Thr Pro Asn
35 40 45

His Gly Cys Glu Asp Ala Ser Asp Thr Ser Leu Leu Gly Val Leu Pro

50

55

60

Ala Ser Glu Ala Thr Lys

65

70

<210> 387

<211> 3104

<212> DNA

<213> Homo sapiens

<400> 387

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<210> 388
<211> 2283
<212> DNA
<213> Homo sapiens

<400> 388
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ctccaggatt ttgacactt gctcctgagt ggtatggaa atactctta cgtggggct 240
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gtc 2283

<210> 389

<211> 761

<212> PRT

<213> Homo sapiens >

<400> 389

Met Ala Leu Pro Ala Leu Gly Leu Asp Pro Trp Ser Leu Leu Gly Leu
1 5 10 15

Phe Leu Phe Gln Leu Leu Gln Leu Leu Pro Thr Thr Thr Ala Gly
20 25 30

Gly Gly Gly Gln Gly Pro Met Pro Arg Val Arg Tyr Tyr Ala Gly Asp
35 40 45

Glu Arg Arg Ala Leu Ser Phe Phe His Gln Lys Gly Leu Gln Asp Phe
50 55 60

Asp Thr Leu Leu Leu Ser Gly Asp Gly Asn Thr Leu Tyr Val Gly Ala
65 70 75 80

Arg Glu Ala Ile Leu Ala Leu Asp Ile Gln Asp Pro Gly Val Pro Arg
85 90 95

Leu Lys Asn Met Ile Pro Trp Pro Ala Ser Asp Arg Lys Lys Ser Glu
100 105 110

Cys Ala Phe Lys Lys Ser Asn Glu Thr Gln Cys Phe Asn Phe Ile
115 120 125

Arg Val Leu Val Ser Tyr Asn Val Thr His Leu Tyr Thr Cys Gly Thr

PROTEIN SEQUENCE

130	135	140
Phe Ala Phe Ser Pro Ala Cys Thr Phe Ile Glu Leu Gln Asp Ser Tyr		
145	150	155
Leu Leu Pro Ile Ser Glu Asp Lys Val Met Glu Gly Lys Gly Gln Ser		
165	170	175
Pro Phe Asp Pro Ala His Lys His Thr Ala Val Leu Val Asp Gly Met		
180	185	190
Leu Tyr Ser Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile Leu		
195	200	205
Met Arg Thr Leu Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe Leu		
210	215	220
Arg Trp Leu His His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser Thr		
225	230	235
240		
Gln Val Val Tyr Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp Phe		
245	250	255
Phe Glu Arg Leu His Thr Ser Arg Val Ala Arg Val Cys Lys Asn Asp		
260	265	270
Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu Lys		
275	280	285
Ala Gln Leu Leu Cys Thr Gln Pro Gly Gln Leu Pro Phe Asn Val Ile		
290	295	300
Arg His Ala Val Leu Leu Pro Ala Asp Ser Pro Thr Ala Pro His Ile		
305	310	315
320		
Tyr Ala Val Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser Ser		
325	330	335
Ala Val Cys Ala Phe Ser Leu Leu Asp Ile Glu Arg Val Phe Lys Gly		
340	345	350
Lys Tyr Lys Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr Arg		
355	360	365
Gly Pro Glu Thr Asn Pro Arg Pro Gly Ser Cys Ser Val Gly Pro Ser		
370	375	380
Ser Asp Lys Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp Glu		

DRAFT 3

385	390	395	400
Gln Val Val Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr Thr			
405	410	415	
Arg Leu Ala Val Glu Thr Ala Gln Gly Leu Asp Gly His Ser His Leu			
420	425	430	
Val Met Tyr Leu Gly Thr Thr Gly Ser Leu His Lys Ala Val Val			
435	440	445	
Ser Gly Asp Ser Ser Ala His Leu Val Glu Glu Ile Gln Leu Phe Pro			
450	455	460	
Asp Pro Glu Pro Val Arg Asn Leu Gln Leu Ala Pro Thr Gln Gly Ala			
465	470	475	480
Val Phe Val Gly Phe Ser Gly Gly Val Trp Arg Val Pro Arg Ala Asn			
485	490	495	
Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp Pro			
500	505	510	
His Cys Ala Trp Asp Pro Glu Ser Arg Thr Cys Cys Leu Leu Ser Ala			
515	520	525	
Pro Asn Leu Asn Ser Trp Lys Gln Asp Met Glu Arg Gly Asn Pro Glu			
530	535	540	
Trp Ala Cys Ala Ser Gly Pro Met Ser Arg Ser Leu Arg Pro Gln Ser			
545	550	555	560
Arg Pro Gln Ile Ile Lys Glu Val Leu Ala Val Pro Asn Ser Ile Leu			
565	570	575	
Glu Leu Pro Cys Pro His Leu Ser Ala Leu Ala Ser Tyr Tyr Trp Ser			
580	585	590	
His Gly Pro Ala Ala Val Pro Glu Ala Ser Ser Thr Val Tyr Asn Gly			
595	600	605	
Ser Leu Leu Leu Ile Val Gln Asp Gly Val Gly Gly Leu Tyr Gln Cys			
610	615	620	
Trp Ala Thr Glu Asn Gly Phe Ser Tyr Pro Val Ile Ser Tyr Trp Val			
625	630	635	640
Asp Ser Gln Asp Gln Thr Leu Ala Leu Asp Pro Glu Leu Ala Gly Ile			

DRAFT PROTEIN

	645	650	655
Pro Arg Glu His Val Lys Val Pro Leu Thr Arg Val Ser Gly Gly Ala			
660	665	670	
Ala Leu Ala Ala Gln Gln Ser Tyr Trp Pro His Phe Val Thr Val Thr			
675	680	685	
Val Leu Phe Ala Leu Val Leu Ser Gly Ala Leu Ile Ile Leu Val Ala			
690	695	700	
Ser Pro Leu Arg Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Glu			
705	710	715	720
Thr Leu Arg Pro Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His Leu			
725	730	735	
Gln Ser Pro Lys Glu Cys Arg Thr Ser Ala Ser Asp Val Asp Ala Asp			
740	745	750	
Asn Asn Cys Leu Gly Thr Glu Val Ala			
755	760		
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<210> 390			
<211> 31			
<212> PRT			
<213> Homo sapiens			
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<400> 390			
Met Ala Leu Pro Ala Leu Gly Leu Asp Pro Trp Ser Leu Leu Gly Leu			
1	5	10	15
Phe Leu Phe Gln Leu Leu Gln Leu Leu Leu Pro Thr Thr Thr Ala			
20	25	30	
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<210> 391			
<211> 730			
<212> PRT			
<213> Homo sapiens			
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<400> 391			
Gly Gly Gly Gly Gln Gly Pro Met Pro Arg Val Arg Tyr Tyr Ala Gly			
1	5	10	15
Asp Glu Arg Arg Ala Leu Ser Phe Phe His Gln Lys Gly Leu Gln Asp			
20	25	30	

Phe Asp Thr Leu Leu Leu Ser Gly Asp Gly Asn Thr Leu Tyr Val Gly
35 40 45

Ala Arg Glu Ala Ile Leu Ala Leu Asp Ile Gln Asp Pro Gly Val Pro
50 55 60

Arg Leu Lys Asn Met Ile Pro Trp Pro Ala Ser Asp Arg Lys Lys Ser
65 70 75 80

Glu Cys Ala Phe Lys Lys Ser Asn Glu Thr Gln Cys Phe Asn Phe
85 90 95

Ile Arg Val Leu Val Ser Tyr Asn Val Thr His Leu Tyr Thr Cys Gly
100 105 110

Thr Phe Ala Phe Ser Pro Ala Cys Thr Phe Ile Glu Leu Gln Asp Ser
115 120 125

Tyr Leu Leu Pro Ile Ser Glu Asp Lys Val Met Glu Gly Lys Gly Gln
130 135 140

Ser Pro Phe Asp Pro Ala His Lys His Thr Ala Val Leu Val Asp Gly
145 150 155 160

Met Leu Tyr Ser Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile
165 170 175

Leu Met Arg Thr Leu Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe
180 185 190

Leu Arg Trp Leu His His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser
195 200 205

Thr Gln Val Val Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp
210 215 220

Phe Phe Glu Arg Leu His Thr Ser Arg Val Ala Arg Val Cys Lys Asn
225 230 235 240

Asp Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu
245 250 255

Lys Ala Gln Leu Leu Cys Thr Gln Pro Gly Gln Leu Pro Phe Asn Val
260 265 270

Ile Arg His Ala Val Leu Leu Pro Ala Asp Ser Pro Thr Ala Pro His
275 280 285

FOLIC ACID

Ile Tyr Ala Val Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser
290 295 300

Ser Ala Val Cys Ala Phe Ser Leu Leu Asp Ile Glu Arg Val Phe Lys
305 310 315 320

Gly Lys Tyr Lys Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr
325 330 335

Arg Gly Pro Glu Thr Asn Pro Arg Pro Gly Ser Cys Ser Val Gly Pro
340 345 350

Ser Ser Asp Lys Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp
355 360 365

Glu Gln Val Val Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr
370 375 380

Thr Arg Leu Ala Val Glu Thr Ala Gln Gly Leu Asp Gly His Ser His
385 390 395 400

Leu Val Met Tyr Leu Gly Thr Thr Gly Ser Leu His Lys Ala Val
405 410 415

Val Ser Gly Asp Ser Ser Ala His Leu Val Glu Glu Ile Gln Leu Phe
420 425 430

Pro Asp Pro Glu Pro Val Arg Asn Leu Gln Leu Ala Pro Thr Gln Gly
435 440 445

Ala Val Phe Val Gly Phe Ser Gly Gly Val Trp Arg Val Pro Arg Ala
450 455 460

Asn Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp
465 470 475 480

Pro His Cys Ala Trp Asp Pro Glu Ser Arg Thr Cys Cys Leu Leu Ser
485 490 495

Ala Pro Asn Leu Asn Ser Trp Lys Gln Asp Met Glu Arg Gly Asn Pro
500 505 510

Glu Trp Ala Cys Ala Ser Gly Pro Met Ser Arg Ser Leu Arg Pro Gln
515 520 525

Ser Arg Pro Gln Ile Ile Lys Glu Val Leu Ala Val Pro Asn Ser Ile
530 535 540

PDB ID: 1D9O

Leu Glu Leu Pro Cys Pro His Leu Ser Ala Leu Ala Ser Tyr Tyr Trp
545 550 555 560

Ser His Gly Pro Ala Ala Val Pro Glu Ala Ser Ser Thr Val Tyr Asn
565 570 575

Gly Ser Leu Leu Leu Ile Val Gln Asp Gly Val Gly Gly Leu Tyr Gln
580 585 590

Cys Trp Ala Thr Glu Asn Gly Phe Ser Tyr Pro Val Ile Ser Tyr Trp
595 600 605

Val Asp Ser Gln Asp Gln Thr Leu Ala Leu Asp Pro Glu Leu Ala Gly
610 615 620

Ile Pro Arg Glu His Val Lys Val Pro Leu Thr Arg Val Ser Gly Gly
625 630 635 640

Ala Ala Leu Ala Ala Gln Gln Ser Tyr Trp Pro His Phe Val Thr Val
645 650 655

Thr Val Leu Phe Ala Leu Val Leu Ser Gly Ala Leu Ile Ile Leu Val
660 665 670

Ala Ser Pro Leu Arg Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys
675 680 685

Glu Thr Leu Arg Pro Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His
690 695 700

Leu Gln Ser Pro Lys Glu Cys Arg Thr Ser Ala Ser Asp Val Asp Ala
705 710 715 720

Asp Asn Asn Cys Leu Gly Thr Glu Val Ala
725 730

<210> 392

<211> 652

<212> PRT

<213> Homo sapiens

<400> 392

Gly Gly Gly Gly Gln Gly Pro Met Pro Arg Val Arg Tyr Tyr Ala Gly
1 5 10 15

Asp Glu Arg Arg Ala Leu Ser Phe Phe His Gln Lys Gly Leu Gln Asp

DETERMINANT

	20	25	30
Phe Asp Thr Leu Leu Leu Ser Gly Asp Gly Asn Thr Leu Tyr Val Gly			
35	40	45	
Ala Arg Glu Ala Ile Leu Ala Leu Asp Ile Gln Asp Pro Gly Val Pro			
50	55	60	
Arg Leu Lys Asn Met Ile Pro Trp Pro Ala Ser Asp Arg Lys Lys Ser			
65	70	75	80
Glu Cys Ala Phe Lys Lys Ser Asn Glu Thr Gln Cys Phe Asn Phe			
85	90	95	
Ile Arg Val Leu Val Ser Tyr Asn Val Thr His Leu Tyr Thr Cys Gly			
100	105	110	
Thr Phe Ala Phe Ser Pro Ala Cys Thr Phe Ile Glu Leu Gln Asp Ser			
115	120	125	
Tyr Leu Leu Pro Ile Ser Glu Asp Lys Val Met Glu Gly Lys Gly Gln			
130	135	140	
Ser Pro Phe Asp Pro Ala His Lys His Thr Ala Val Leu Val Asp Gly			
145	150	155	160
Met Leu Tyr Ser Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile			
165	170	175	
Leu Met Arg Thr Leu Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe			
180	185	190	
Leu Arg Trp Leu His His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser			
195	200	205	
Thr Gln Val Val Tyr Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp			
210	215	220	
Phe Phe Glu Arg Leu His Thr Ser Arg Val Ala Arg Val Cys Lys Asn			
225	230	235	240
Asp Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu			
245	250	255	
Lys Ala Gln Leu Leu Cys Thr Gln Pro Gly Gln Leu Pro Phe Asn Val			
260	265	270	
Ile Arg His Ala Val Leu Leu Pro Ala Asp Ser Pro Thr Ala Pro His			

PROTEIN SEQUENCE

275	280	285
Ile Tyr Ala Val Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser		
290	295	300
Ser Ala Val Cys Ala Phe Ser Leu Leu Asp Ile Glu Arg Val Phe Lys		
305	310	315
Gly Lys Tyr Lys Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr		
325	330	335
Arg Gly Pro Glu Thr Asn Pro Arg Pro Gly Ser Cys Ser Val Gly Pro		
340	345	350
Ser Ser Asp Lys Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp		
355	360	365
Glu Gln Val Val Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr		
370	375	380
Thr Arg Leu Ala Val Glu Thr Ala Gln Gly Leu Asp Gly His Ser His		
385	390	395
Leu Val Met Tyr Leu Gly Thr Thr Gly Ser Leu His Lys Ala Val		
405	410	415
Val Ser Gly Asp Ser Ser Ala His Leu Val Glu Glu Ile Gln Leu Phe		
420	425	430
Pro Asp Pro Glu Pro Val Arg Asn Leu Gln Leu Ala Pro Thr Gln Gly		
435	440	445
Ala Val Phe Val Gly Phe Ser Gly Gly Val Trp Arg Val Pro Arg Ala		
450	455	460
Asn Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp		
465	470	475
Pro His Cys Ala Trp Asp Pro Glu Ser Arg Thr Cys Cys Leu Leu Ser		
485	490	495
Ala Pro Asn Leu Asn Ser Trp Lys Gln Asp Met Glu Arg Gly Asn Pro		
500	505	510
Glu Trp Ala Cys Ala Ser Gly Pro Met Ser Arg Ser Leu Arg Pro Gln		
515	520	525
Ser Arg Pro Gln Ile Ile Lys Glu Val Leu Ala Val Pro Asn Ser Ile		

卷之三

<210> 394
<211> 57
<212> PRT
<213> Homo sapiens

<400> 394

Ser	Pro	Leu	Arg	Ala	Leu	Arg	Ala	Arg	Gly	Lys	Val	Gln	Gly	Cys	Gl
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Thr Leu Arg Pro Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His Leu

20							25							30	
----	--	--	--	--	--	--	----	--	--	--	--	--	--	----	--

Gln Ser Pro Lys Glu Cys Arg Thr Ser Ala Ser Asp Val Asp Ala Asp
35 40 45

Asn Asn Cys Leu Gly Thr Glu Val Ala
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<211> 1980
<212> DNA
<213> Homo sapiens

<400> 403
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gactgggggt tcgagtctcc actttttgtt ctgtataact ccttgcgtga gcccatggag 540
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gchgctaaatg ccaacctcag cacactggag gtttaacca agattgacaa ctacactctg 660
ctggattact ccctaatacag ttctccagaa attactgaga actaccttga cctgaacttg 720
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atttccaacc atttgttca aaactctcaa ggccttggca acgtgctctc ccggattgca 960
gagatctaca tcttgccttca gcccctcatg gtgaggatca tggccacaga gcctccata 1020
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caacccaaaga actccacagt taaaaccatc gtttccatgg acttcgttgc tagtaccagt 1140
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tctagtggtt ttcccctacc tgcataattgg tttcatgtt ttatattcac tgcgttactatc 1920
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<211> 1365
<212> DNA
<213> Homo sapiens

<400> 404
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tatggtgttc aagctggaat gaagatgatt gagcaaatgc taaaagaaaa gaaactccca 180
gatttaagcg gttctgagtc tcttgaattt ctaaaagttg attatgtaaa ctacaatttt 240
tcaaataataa aaatcagtgc ctttcattt ccaaataacct cattggctt tgtgcctgga 300
gtgggaatca aagcgctaac caaccatggc actgccaaca tcagcacaga ctgggggttc 360
gagtctccac ttttggttct gtataactcc tttgctgagc ccatggagaa acccatttt 420
aagaacttaa atgaaatgct ctgtcccatt attgcaagtg aagtcaaagc gctaaatgcc 480
aacctcagca cactggaggt tttAACCAAG attgacaact acactctgct ggattactcc 540
ctaatacggtt ctccagaaat tactgagaac taccttgacc tgaacttgaa ggggttatttc 600
tacccactgg aaaACCTCAC cgACCCCCC ttctcaccag ttccTTTGT gctcccagaa 660
cgcagcaact ccatgctcta cattggatc gccgagtatt tcttAAATC tgctccctt 720
gctcatttca cagctgggtt tttcaatctc actctctcca ccgaagagat ttccaaccat 780
tttggttcaaa actctcaagg cttggcaac gtgctctccc ggattgcaga gatctacatc 840
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ccaggcaatt tcaccctgga catccctgcc tccatcatga tgctcaccca acccaagaac 960
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cactttggag tcctccact ggccaatgca aaattgcagc aaggatttcc tctgccaat 1200
ccacacaaat tcttattcgt caattcagat attgaagttc ttgagggttt cctttgatt 1260
tccaccgacc tgaagtatga aacatcctca aagcagcagc caagttcca cgtatggaa 1320
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<210> 405

<211> 455

<212> PRT

<213> Homo sapiens

<400> 405

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Asn	Leu	Tyr	Val	Ser	Ser	Ser	Gln	Thr	Ile	Tyr	Pro	Gly	Ile	Lys	Ala
20															

Arg	Ile	Thr	Gln	Arg	Ala	Leu	Asp	Tyr	Gly	Val	Gln	Ala	Gly	Met	Lys
35															

Met	Ile	Glu	Gln	Met	Leu	Lys	Glu	Lys	Leu	Pro	Asp	Leu	Ser	Gly
50														

Ser	Glu	Ser	Leu	Glu	Phe	Leu	Lys	Val	Asp	Tyr	Val	Asn	Tyr	Asn	Phe
65															

Ser	Asn	Ile	Lys	Ile	Ser	Ala	Phe	Ser	Phe	Pro	Asn	Thr	Ser	Leu	Ala
85															

D E T A I L S

Phe Val Pro Gly Val Gly Ile Lys Ala Leu Thr Asn His Gly Thr Ala
100 105 110

Asn Ile Ser Thr Asp Trp Gly Phe Glu Ser Pro Leu Phe Val Leu Tyr
115 120 125

Asn Ser Phe Ala Glu Pro Met Glu Lys Pro Ile Leu Lys Asn Leu Asn
130 135 140

Glu Met Leu Cys Pro Ile Ile Ala Ser Glu Val Lys Ala Leu Asn Ala
145 150 155 160

Asn Leu Ser Thr Leu Glu Val Leu Thr Lys Ile Asp Asn Tyr Thr Leu
165 170 175

Leu Asp Tyr Ser Leu Ile Ser Ser Pro Glu Ile Thr Glu Asn Tyr Leu
180 185 190

Asp Leu Asn Leu Lys Gly Val Phe Tyr Pro Leu Glu Asn Leu Thr Asp
195 200 205

Pro Pro Phe Ser Pro Val Pro Phe Val Leu Pro Glu Arg Ser Asn Ser
210 215 220

Met Leu Tyr Ile Gly Ile Ala Glu Tyr Phe Phe Lys Ser Ala Ser Phe
225 230 235 240

Ala His Phe Thr Ala Gly Val Phe Asn Leu Thr Leu Ser Thr Glu Glu
245 250 255

Ile Ser Asn His Phe Val Gln Asn Ser Gln Gly Leu Gly Asn Val Leu
260 265 270

Ser Arg Ile Ala Glu Ile Tyr Ile Leu Ser Gln Pro Phe Met Val Arg
275 280 285

Ile Met Ala Thr Glu Pro Pro Ile Ile Asn Leu Gln Pro Gly Asn Phe
290 295 300

Thr Leu Asp Ile Pro Ala Ser Ile Met Met Leu Thr Gln Pro Lys Asn
305 310 315 320

Ser Thr Val Glu Thr Ile Val Ser Met Asp Phe Val Ala Ser Thr Ser
325 330 335

Val Gly Leu Val Ile Leu Gly Gln Arg Leu Val Cys Ser Leu Ser Leu
340 345 350

Asn Arg Phe Arg Leu Ala Leu Pro Glu Ser Asn Arg Ser Asn Ile Glu
355 360 365

Val Leu Arg Phe Glu Asn Ile Leu Ser Ser Ile Leu His Phe Gly Val
370 375 380

Leu Pro Leu Ala Asn Ala Lys Leu Gln Gln Gly Phe Pro Leu Pro Asn
385 390 395 400

Pro His Lys Phe Leu Phe Val Asn Ser Asp Ile Glu Val Leu Glu Gly
405 410 415

Phe Leu Leu Ile Ser Thr Asp Leu Lys Tyr Glu Thr Ser Ser Lys Gln
420 425 430

Gln Pro Ser Phe His Val Trp Glu Gly Leu Asn Leu Ile Ser Arg Gln
435 440 445

Trp Arg Gly Lys Ser Ala Pro
450 455

<210> 406

<211> 23

<212> PRT

<213> Homo sapiens

<400> 406

Met Cys Thr Lys Thr Ile Pro Val Leu Trp Gly Cys Phe Leu Leu Trp
1 5 10 15

Asn Leu Tyr Val Ser Ser Ser
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<210> 407

<211> 432

<212> PRT

<213> Homo sapiens

<400> 407

Gln Thr Ile Tyr Pro Gly Ile Lys Ala Arg Ile Thr Gln Arg Ala Leu
1 5 10 15

Asp Tyr Gly Val Gln Ala Gly Met Lys Met Ile Glu Gln Met Leu Lys
20 25 30

Glu Lys Lys Leu Pro Asp Leu Ser Gly Ser Glu Ser Leu Glu Phe Leu

35

40

45

Lys Val Asp Tyr Val Asn Tyr Asn Phe Ser Asn Ile Lys Ile Ser Ala
 50 55 60

Phe Ser Phe Pro Asn Thr Ser Leu Ala Phe Val Pro Gly Val Gly Ile
 65 70 75 80

Lys Ala Leu Thr Asn His Gly Thr Ala Asn Ile Ser Thr Asp Trp Gly
 85 90 95

Phe Glu Ser Pro Leu Phe Val Leu Tyr Asn Ser Phe Ala Glu Pro Met
 100 105 110

Glu Lys Pro Ile Leu Lys Asn Leu Asn Glu Met Leu Cys Pro Ile Ile
 115 120 125

Ala Ser Glu Val Lys Ala Leu Asn Ala Asn Leu Ser Thr Leu Glu Val
 130 135 140

Leu Thr Lys Ile Asp Asn Tyr Thr Leu Leu Asp Tyr Ser Leu Ile Ser
 145 150 155 160

Ser Pro Glu Ile Thr Glu Asn Tyr Leu Asp Leu Asn Leu Lys Gly Val
 165 170 175

Phe Tyr Pro Leu Glu Asn Leu Thr Asp Pro Pro Phe Ser Pro Val Pro
 180 185 190

Phe Val Leu Pro Glu Arg Ser Asn Ser Met Leu Tyr Ile Gly Ile Ala
 195 200 205

Glu Tyr Phe Phe Lys Ser Ala Ser Phe Ala His Phe Thr Ala Gly Val
 210 215 220

Phe Asn Leu Thr Leu Ser Thr Glu Glu Ile Ser Asn His Phe Val Gln
 225 230 235 240

Asn Ser Gln Gly Leu Gly Asn Val Leu Ser Arg Ile Ala Glu Ile Tyr
 245 250 255

Ile Leu Ser Gln Pro Phe Met Val Arg Ile Met Ala Thr Glu Pro Pro
 260 265 270

Ile Ile Asn Leu Gln Pro Gly Asn Phe Thr Leu Asp Ile Pro Ala Ser
 275 280 285

Ile Met Met Leu Thr Gln Pro Lys Asn Ser Thr Val Glu Thr Ile Val

HUMAN

290	295	300
Ser Met Asp Phe Val Ala Ser Thr Ser Val Gly Leu Val Ile Leu Gly		
305	310	315
Gln Arg Leu Val Cys Ser Leu Ser Leu Asn Arg Phe Arg Leu Ala Leu		
325	330	335
Pro Glu Ser Asn Arg Ser Asn Ile Glu Val Leu Arg Phe Glu Asn Ile		
340	345	350
Leu Ser Ser Ile Leu His Phe Gly Val Leu Pro Leu Ala Asn Ala Lys		
355	360	365
Leu Gln Gln Gly Phe Pro Leu Pro Asn Pro His Lys Phe Leu Phe Val		
370	375	380
Asn Ser Asp Ile Glu Val Leu Glu Gly Phe Leu Leu Ile Ser Thr Asp		
385	390	395
Leu Lys Tyr Glu Thr Ser Ser Lys Gln Gln Pro Ser Phe His Val Trp		
405	410	415
Glu Gly Leu Asn Leu Ile Ser Arg Gln Trp Arg Gly Lys Ser Ala Pro		
420	425	430
<210> 408		
<211> 483		
<212> PRT		
<213> Homo sapiens		
<400> 408		
Met Ala Arg Gly Pro Cys Asn Ala Pro Arg Trp Val Ser Leu Met Val		
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15		
Leu Val Ala Ile Gly Thr Ala Val Thr Ala Ala Val Asn Pro Gly Val		
20	25	30
Val Val Arg Ile Ser Gln Lys Gly Leu Asp Tyr Ala Ser Gln Gln Gly		
35	40	45
Thr Ala Ala Leu Gln Lys Glu Leu Lys Arg Ile Lys Ile Pro Asp Tyr		
50	55	60

Ser Asp Ser Phe Lys Ile Lys His Leu Gly Lys Gly His Tyr Ser Phe
65 70 75 80

Tyr Ser Met Asp Ile Arg Glu Phe Gln Leu Pro Scr Ser Gln Ile Ser
85 90 95

Met Val Pro Asn Val Gly Leu Lys Phe Ser Ile Ser Asn Ala Asn Ile
100 105 110

Lys Ile Ser Gly Lys Trp Lys Ala Gln Lys Arg Phe Leu Lys Met Ser
115 120 125

Gly Asn Phe Asp Leu Ser Ile Glu Gly Met Ser Ile Ser Ala Asp Leu
130 135 140

Lys Leu Gly Ser Asn Pro Thr Ser Gly Lys Pro Thr Ile Thr Cys Ser
145 150 155 160

Ser Cys Ser Ser His Ile Asn Ser Val His Val His Ile Ser Lys Ser
165 170 175

Lys Val Gly Trp Leu Ile Gln Leu Phe His Lys Lys Ile Glu Ser Ala
180 185 190

Leu Arg Asn Lys Met Asn Ser Gln Val Cys Glu Lys Val Thr Asn Ser
195 200 205

Val Ser Ser Lys Leu Gln Pro Tyr Phe Gln Thr Leu Pro Val Met Thr
210 215 220

Lys Ile Asp Ser Val Ala Gly Ile Asn Tyr Gly Leu Val Ala Pro Pro
225 230 235 240

Ala Thr Thr Ala Glu Thr Leu Asp Val Gln Met Lys Gly Glu Phe Tyr
245 250 255

Ser Glu Asn His His Asn Pro Pro Phe Ala Pro Pro Val Met Glu
260 265 270

Phe Pro Ala Ala His Asp Arg Met Val Tyr Leu Gly Leu Ser Asp Tyr
275 280 285

Phe Phe Asn Thr Ala Gly Leu Val Tyr Gln Glu Ala Gly Val Leu Lys
290 295 300

Met Thr Leu Arg Asp Asp Met Ile Pro Lys Glu Ser Lys Phe Arg Leu
305 310 315 320

100
90
80
70
60
50
40
30
20
10

Thr Thr Lys Phe Phe Gly Thr Phe Leu Pro Glu Val Ala Lys Lys Phe
325 330 335

Pro Asn Met Lys Ile Gln Ile His Val Ser Ala Ser Thr Pro Pro His
340 345 350

Leu Ser Val Gln Pro Thr Gly Leu Thr Phe Tyr Pro Ala Val Asp Val
355 360 365

Gln Ala Phe Ala Val Leu Pro Asn Ser Ser Leu Ala Ser Leu Phe Leu
370 375 380

Ile Gly Met His Thr Thr Gly Ser Met Glu Val Ser Ala Glu Ser Asn
385 390 395 400

Arg Leu Val Gly Glu Leu Lys Leu Asp Arg Leu Leu Leu Glu Leu Lys
405 410 415

His Ser Asn Ile Gly Pro Phe Pro Val Glu Leu Leu Gln Asp Ile Met
420 425 430

Asn Tyr Ile Val Pro Ile Leu Val Leu Pro Arg Val Asn Glu Lys Leu
435 440 445

Gln Lys Gly Phe Pro Leu Pro Thr Pro Ala Arg Val Gln Leu Tyr Asn
450 455 460

Val Val Leu Gln Pro His Gln Asn Phe Leu Leu Phe Gly Ala Asp Val
465 470 475 480

Val Tyr Lys

<210> 409
<211> 481
<212> PRT
<213> Homo sapiens

<400> 409
Met Gly Ala Leu Ala Arg Ala Leu Pro Ser Ile Leu Leu Ala Leu Leu
1 5 10 15

Leu Thr Ser Thr Pro Glu Ala Leu Gly Ala Asn Pro Gly Leu Val Ala
20 25 30

Arg Ile Thr Asp Lys Gly Leu Gln Tyr Ala Ala Gln Glu Gly Leu Leu
35 40 45

Ala Leu Gln Ser Glu Leu Leu Arg Ile Thr Leu Pro Asp Phe Thr Gly
50 55 60

Asp Leu Arg Ile Pro His Val Gly Arg Gly Arg Tyr Glu Phe His Ser
65 70 75 80

Leu Asn Ile His Glu Phe Gln Leu Pro Ser Ser Gln Ile Ser Met Val
85 90 95

Pro Asn Val Gly Leu Lys Phe Ser Ile Ser Asn Ala Asn Ile Lys Ile
100 105 110

Ser Gly Lys Trp Lys Ala Gln Lys Arg Phe Leu Lys Met Ser Gly Asn
115 120 125

Phe Asp Leu Ser Ile Glu Gly Met Ser Ile Ser Ala Asp Leu Lys Leu
130 135 140

Gly Ser Asn Pro Thr Ser Gly Lys Pro Thr Ile Thr Cys Ser Ser Cys
145 150 155 160

Ser Ser His Ile Asn Ser Val His Val His Ile Ser Lys Ser Lys Val
165 170 175

Gly Trp Leu Ile Gln Leu Phe His Lys Lys Ile Glu Ser Ala Leu Arg
180 185 190

Asn Lys Met Asn Ser Gln Val Cys Glu Lys Val Thr Asn Ser Val Ser
195 200 205

Ser Lys Leu Gln Pro Tyr Phe Gln Thr Leu Pro Val Met Thr Lys Ile
210 215 220

Asp Ser Val Ala Gly Ile Asn Tyr Gly Leu Val Ala Pro Pro Ala Thr
225 230 235 240

Thr Ala Glu Thr Leu Asp Val Gln Met Lys Gly Glu Phe Tyr Ser Glu
245 250 255

Asn His His Asn Pro Pro Pro Phe Ala Pro Pro Val Met Glu Phe Pro
260 265 270

Ala Ala His Asp Arg Met Val Tyr Leu Gly Leu Ser Asp Tyr Phe Phe
275 280 285

Asn Thr Ala Gly Leu Val Tyr Gln Glu Ala Gly Val Leu Lys Met Thr
290 295 300

PDB ID: 2A2D

Leu Arg Asp Asp Met Ile Pro Lys Glu Ser Lys Phe Arg Leu Thr Thr
305 310 315 320

Lys Phe Phe Gly Thr Phe Leu Pro Glu Val Ala Lys Lys Phe Pro Asn
325 330 335

Met Lys Ile Gln Ile His Val Ser Ala Ser Thr Pro Pro His Leu Ser
340 345 350

Val Gln Pro Thr Gly Leu Thr Phe Tyr Pro Ala Val Asp Val Gln Ala
355 360 365

Leu Ala Val Leu Pro Asn Ser Ser Leu Ala Ser Leu Phe Leu Ile Gly
370 375 380

Met His Thr Thr Gly Ser Met Glu Val Ser Ala Glu Ser Asn Arg Leu
385 390 395 400

Val Gly Glu Leu Lys Leu Asp Arg Leu Leu Leu Glu Leu Lys His Ser
405 410 415

Asn Ile Gly Pro Phe Pro Val Glu Leu Leu Gln Asp Ile Met Asn Tyr
420 425 430

Ile Val Pro Ile Leu Val Leu Pro Arg Val Asn Glu Lys Leu Gln Lys
435 440 445

Gly Phe Pro Leu Pro Thr Pro Ala Arg Val Gln Leu Tyr Asn Val Val
450 455 460

Leu Gln Pro His Gln Asn Phe Leu Leu Phe Gly Ala Asp Val Val Tyr
465 470 475 480

Lys

<210> 410
<211> 383
<212> PRT
<213> Homo sapiens

<400> 410
Met Arg Ile Ala His Ala Ser Ser Arg Gly Asn Ile Ser Ile Phe Ser
1 5 10 15

Val Phe Leu Ile Pro Leu Ile Ala Tyr Ile Leu Ile Leu Pro Gly Val

TOP SECRET//NOFORN

20

25

30

Arg Arg Lys Arg Val Val Thr Thr Val Thr Tyr Val Leu Met Leu Ala
35 40 45

Val Gly Gly Ala Leu Ile Ala Ser Leu Ile Tyr Pro Cys Trp Ala Ser
50 55 60

Gly Ser Gln Met Ile Tyr Thr Gln Phe Arg Gly His Ser Asn Glu Arg
65 70 75 80

Ile Leu Ala Lys Ile Gly Val Glu Ile Gly Leu Gln Lys Val Asn Val
85 90 95

Thr Leu Lys Phe Glu Arg Leu Leu Ser Ser Asn Asp Val Leu Pro Gly
100 105 110

Ser Asp Met Thr Glu Leu Tyr Tyr Asn Glu Gly Phe Asp Ile Ser Gly
115 120 125

Ile Ser Ser Met Ala Glu Ala Leu His His Gly Leu Glu Asn Gly Leu
130 135 140

Pro Tyr Pro Met Leu Ser Val Leu Glu Tyr Phe Ser Leu Asn Gln Asp
145 150 155 160

Ser Phe Asp Trp Gly Arg His Tyr Arg Val Ala Gly His Tyr Thr His
165 170 175

Ala Ala Ile Trp Phe Ala Phe Ala Cys Trp Cys Leu Ser Val Val Leu
180 185 190

Met Leu Phe Leu Pro His Asn Ala Tyr Lys Ser Ile Leu Ala Thr Gly
195 200 205

Ile Ser Cys Leu Ile Ala Cys Leu Val Tyr Leu Leu Ser Pro Cys
210 215 220

Glu Leu Arg Ile Ala Phe Thr Gly Glu Asn Phe Glu Arg Val Asp Leu
225 230 235 240

Thr Ala Thr Phe Ser Phe Cys Phe Tyr Leu Ile Phe Ala Ile Gly Ile
245 250 255

Leu Cys Val Leu Cys Gly Leu Gly Leu Cys Glu His Trp Arg
260 265 270

Ile Tyr Thr Leu Ser Thr Phe Leu Asp Ala Ser Leu Asp Glu His Val

100 200 300 400 500 600

275	280	285
Gly Pro Lys Trp Lys Lys Leu Pro Thr Gly Gly Pro Ala Leu Gln Gly		
290	295	300
Val Gln Ile Gly Ala Tyr Gly Thr Asn Thr Thr Asn Ser Ser Arg Asp		
305	310	315
Lys Asn Asp Ile Ser Ser Asp Lys Thr Ala Gly Ser Ser Gly Phe Gln		
325	330	335
Ser Arg Thr Ser Thr Cys Gln Ser Ser Ala Ser Ser Ala Ser Leu Arg		
340	345	350
Ser Gln Ser Ser Ile Glu Thr Val His Asp Glu Ala Glu Leu Glu Arg		
355	360	365
Thr His Val His Phe Leu Gln Glu Pro Cys Ser Ser Ser Ser Thr		
370	375	380
<210> 411		
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<213> Homo sapiens		
<400> 411		
Met Lys Met Arg Phe Leu Gly Leu Val Val Cys Leu Val Leu Trp Pro		
1	5	10
Leu His Ser Glu Gly Ser Gly Gly Lys Leu Thr Ala Val Asp Pro Glu		
20	25	30
Thr Asn Met Asn Val Ser Glu Ile Ile Ser Tyr Trp Gly Phe Pro Ser		
35	40	45
Glu Glu Tyr Leu Val Glu Thr Glu Asp Gly Tyr Ile Leu Cys Leu Asn		
50	55	60
Arg Ile Pro His Gly Arg Lys Asn His Ser Asp Lys Gly Pro Lys Pro		
65	70	75
80		
Val Val Phe Leu Gln His Gly Leu Leu Ala Asp Ser Ser Asn Trp Val		
85	90	95
Thr Asn Leu Ala Asn Ser Ser Leu Gly Phe Ile Leu Ala Asp Ala Gly		
100	105	110

Phe Asp Val Trp Met Gly Asn Ser Arg Gly Asn Thr Trp Ser Arg Lys
115 120 125

His Lys Thr Leu Ser Val Ser Gln Asp Glu Phe Trp Ala Phe Ser Tyr
130 135 140

Asp Glu Met Ala Lys Tyr Asp Leu Pro Ala Ser Ile Asn Phe Ile Leu
145 150 155 160

Asn Lys Thr Gly Gln Glu Gln Val Tyr Tyr Val Gly His Ser Gln Gly
165 170 175

Thr Thr Ile Gly Phe Ile Ala Phe Ser Gln Ile Pro Glu Leu Ala Lys
180 185 190

Arg Ile Lys Met Phe Phe Ala Leu Gly Pro Val Ala Ser Val Ala Phe
195 200 205

Cys Thr Ser Pro Met Ala Lys Leu Gly Arg Leu Pro Asp His Leu Ile
210 215 220

Lys Asp Leu Phe Gly Asp Lys Glu Phe Leu Pro Gln Ser Ala Phe Leu
225 230 235 , 240

Lys Trp Leu Gly Thr His Val Cys Thr His Val Ile Leu Lys Glu Leu
245 250 255

Cys Gly Asn Leu Cys Phe Leu Leu Cys Gly Phe Asn Glu Arg Asn Leu
260 265 270

Asn Met Ser Arg Val Asp Val Tyr Thr Thr His Ser Pro Ala Gly Thr
275 280 285

Ser Val Gln Asn Met Leu His Trp Ser Gln Ala Val Lys Phe Gln Lys
290 295 300

Phe Gln Ala Phe Asp Trp Gly Ser Ser Ala Lys Asn Tyr Phe His Tyr
305 310 315 320

Asn Gln Ser Tyr Pro Pro Thr Tyr Asn Val Lys Asp Met Leu Val Pro
325 330 335

Thr Ala Val Trp Ser Gly Gly His Asp Trp Leu Ala Asp Val Tyr Asp
340 345 350

Val Asn Ile Leu Leu Thr Gln Ile Thr Asn Leu Val Phe His Glu Ser
355 360 365

Ile Pro Glu Trp Glu His Leu Asp Phe Ile Trp Gly Leu Asp Ala Pro
370 375 380

Trp Arg Leu Tyr Asn Lys Ile Ile Asn Leu Met Arg Lys Tyr Gln
385 390 395

<210> 412

<211> 19

<212> PRT

<213> Homo sapiens

<400> 412

Met Ala Pro Pro Ala Ala Arg Leu Ala Leu Leu Ser Ala Ala Ala Leu
1 5 10 15

Thr Leu Ala

<210> 413

<211> 451

<212> PRT

<213> Homo sapiens

<400> 413

Ala Arg Pro Ala Pro Gly Pro Arg Ser Gly Pro Glu Cys Phe Thr Ala
1 5 10 15

Asn Gly Ala Asp Tyr Arg Gly Thr Gln Ser Trp Thr Ala Leu Gln Gly
20 25 30

Gly Lys Pro Cys Leu Phe Trp Asn Glu Thr Phe Gln His Pro Tyr Asn
35 40 45

Thr Leu Lys Tyr Pro Asn Gly Glu Gly Leu Gly Glu His Asn Tyr
50 55 60

Cys Arg Asn Pro Asp Gly Asp Val Ser Pro Trp Cys Tyr Val Ala Glu
65 70 75 80

His Glu Asp Gly Val Tyr Trp Lys Tyr Cys Glu Ile Pro Ala Cys Gln
85 90 95

Met Pro Gly Asn Leu Gly Cys Tyr Lys Asp His Gly Asn Pro Pro Pro
100 105 110

Leu Thr Gly Thr Ser Lys Thr Ser Asn Lys Leu Thr Ile Gln Thr Cys

115 120 125

Ile Ser Phe Cys Arg Ser Gln Arg Phe Lys Phe Ala Gly Met Glu Ser
130 135 140

Gly Tyr Ala Cys Phe Cys Gly Asn Asn Pro Asp Tyr Trp Lys His Gly
145 150 155 160

Glu Ala Ala Ser Thr Glu Cys Asn Ser Val Cys Phe Gly Asp His Thr
165 170 175

Gln Pro Cys Gly Gly Asp Gly Arg Ile Ile Leu Phe Asp Thr Leu Val
180 185 190

Gly Ala Cys Gly Gly Asn Tyr Ser Ala Met Ala Ala Val Val Tyr Ser
195 200 205

Pro Asp Phe Pro Asp Thr Tyr Ala Thr Gly Arg Val Cys Tyr Trp Thr
210 215 220

Ile Arg Val Pro Gly Ala Ser Arg Ile His Phe Asn Phe Thr Leu Phe
225 230 235 240

Asp Ile Arg Asp Ser Ala Asp Met Val Glu Leu Leu Asp Gly Tyr Thr
245 250 255

His Arg Val Leu Val Arg Leu Ser Gly Arg Ser Arg Pro Pro Leu Ser
260 265 270

Phe Asn Val Ser Leu Asp Phe Val Ile Leu Tyr Phe Phe Ser Asp Arg
275 280 285

Ile Asn Gln Ala Gln Gly Phe Ala Val Leu Tyr Gln Ala Thr Lys Glu
290 295 300

Glu Pro Pro Gln Glu Arg Pro Ala Val Asn Gln Thr Leu Ala Glu Val
305 310 315 320

Ile Thr Glu Gln Ala Asn Leu Ser Val Ser Ala Ala His Ser Ser Lys
325 330 335

Val Leu Tyr Val Ile Thr Pro Ser Pro Ser His Pro Pro Gln Thr Ala
340 345 350

Gln Val Ala Ile Pro Gly His Arg Gln Leu Gly Pro Thr Ala Thr Glu
355 360 365

Trp Lys Asp Gly Leu Cys Thr Ala Trp Arg Pro Ser Ser Ser Gln

370 375 380
Ser Gln Gln Leu Ser Gln Arg Phe Phe Cys Met Ser His Leu Asn Leu
385 390 395 400
Ile Glu Ser Leu His Gln Glu Thr Leu Gly Thr Val Val Ser Leu Gly
405 410 415
Leu Leu Glu Ile Ser Gly Pro Phe Ser Met Asn Leu Pro Leu Gln Ser
420 425 430
Pro Ser Leu Arg Arg Ser Ser Arg Val Arg Val Asn Lys Met Thr Ala
435 440 445
Ile Pro Ser
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<210> 414
<211> 150
<212> PRT
<213> Homo sapiens

<400> 414
Lys Lys His Cys Trp Tyr Phe Glu Gly Leu Tyr Pro Thr Tyr Tyr Ile
1 5 10 15

Cys Arg Ser Tyr Glu Asp Cys Cys Gly Ser Arg Cys Cys Val Arg Ala
20 25 30

Leu Ser Ile Gln Arg Leu Trp Tyr Phe Trp Phe Leu Leu Met Met Gly
35 40 45

Val Leu Phe Cys Cys Gly Ala Gly Phe Phe Ile Arg Arg Arg Met Tyr
50 55 60

Pro Pro Pro Leu Ile Glu Glu Pro Thr Phe Asn Val Ser Tyr Thr Arg
65 70 75 80

Gln Pro Pro Asn Pro Ala Pro Gly Ala Gln Gln Met Gly Pro Pro Tyr
85 90 95

Tyr Thr Asp Pro Gly Gly Pro Gly Met Asn Pro Val Gly Asn Thr Met
100 105 110

Ala Met Ala Phe Gln Val Gln Pro Asn Ser Pro His Gly Gly Thr Thr
115 120 125

Tyr Pro Pro Pro Ser Tyr Cys Asn Thr Pro Pro Pro Pro Tyr Glu
130 135 140

Gln Val Val Lys Asp Lys
145 150

<210> 415

<211> 2044

<212> DNA

<213> Homo sapiens

<400> 415

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ttctgattct ggtggcgtat atgttccaga gaaatgtgaa ttcaagtacat atgccaacta 240
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ctcagaataa ggccaagttt tatagttgca tctcaggaa gaaaattttt taggatgttt 1980
atgagttctc caataaatgc attctgcattt acataaaaaaaa aaaaaaaaaaaa aaaaggcgg 2040
ccgc 2044

<210> 416
<211> 1269
<212> DNA
<213> Homo sapiens

<400> 416
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gaggaatatg aagtcgcaac tgaagatggg tatatcctt ctgttaacag gattcctcga 240
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gcagatgctg gtttgacgt gtggatgggg aacagcaggg gaaacgcctg gtctcgaaaa 420
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ggcgtattt 1269

<210> 417
<211> 423
<212> PRT
<213> Homo sapiens

<400> 417
Met Leu Glu Thr Leu Ser Arg Gln Trp Ile Val Ser His Arg Met Glu
1 5 10 15

Met Trp Leu Leu Ile Leu Val Ala Tyr Met Phe Gln Arg Asn Val Asn
20 25 30

Ser Val His Met Pro Thr Lys Ala Val Asp Pro Glu Ala Phe Met Asn
35 40 45

Ile Ser Glu Ile Ile Gln His Gln Gly Tyr Pro Cys Glu Glu Tyr Glu

50

55

60

Val Ala Thr Glu Asp Gly Tyr Ile Leu Ser Val Asn Arg Ile Pro Arg
65 70 75 80

Gly Leu Val Gln Pro Lys Lys Thr Gly Ser Arg Pro Val Val Leu Leu
85 90 95

Gln His Gly Leu Val Gly Gly Ala Ser Asn Trp Ile Ser Asn Leu Pro
100 105 110

Asn Asn Ser Leu Gly Phe Ile Leu Ala Asp Ala Gly Phe Asp Val Trp
115 120 125

Met Gly Asn Ser Arg Gly Asn Ala Trp Ser Arg Lys His Lys Thr Leu
130 135 140

Ser Ile Asp Gln Asp Glu Phe Trp Ala Phe Ser Tyr Asp Glu Met Ala
145 150 155 160

Arg Phe Asp Leu Pro Ala Val Ile Asn Phe Ile Leu Gln Lys Thr Gly
165 170 175

Gln Glu Lys Ile Tyr Tyr Val Gly Tyr Ser Gln Gly Thr Thr Met Gly
180 185 190

Phe Ile Ala Phe Ser Thr Met Pro Glu Leu Ala Gln Lys Ile Lys Met
195 200 205

Tyr Phe Ala Leu Ala Pro Ile Ala Thr Val Lys His Ala Lys Ser Pro
210 215 220

Gly Thr Lys Phe Leu Leu Pro Asp Met Met Ile Lys Gly Leu Phe
225 230 235 240

Gly Lys Lys Glu Phe Leu Tyr Gln Thr Arg Phe Leu Arg Gln Leu Val
245 250 255

Ile Tyr Leu Cys Gly Gln Val Ile Leu Asp Gln Ile Cys Ser Asn Ile
260 265 270

Met Leu Leu Leu Gly Gly Phe Asn Thr Asn Asn Met Asn Met Ser Arg
275 280 285

Ala Ser Val Tyr Ala Ala His Thr Leu Ala Gly Thr Ser Val Gln Asn
290 295 300

Ile Leu His Trp Ser Gln Ala Val Asn Ser Gly Glu Leu Arg Ala Phe

305 310 315 320

Asp Trp Gly Ser Glu Thr Lys Asn Leu Glu Lys Cys Asn Gln Pro Thr
325 330 335

Pro Val Arg Tyr Arg Val Arg Asp Met Thr Val Pro Thr Ala Met Trp
340 345 350

Thr Gly Gly Gln Asp Trp Leu Ser Asn Pro Glu Asp Val Lys Met Leu
355 360 365

Leu Ser Glu Val Thr Asn Leu Ile Tyr His Lys Asn Ile Pro Glu Trp
370 375 380

Ala His Val Asp Phe Ile Trp Gly Leu Asp Ala Pro His Arg Met Tyr
385 390 395 400

Asn Glu Ile Ile His Leu Met Gln Gln Glu Glu Thr Asn Leu Ser Gln
405 410 415

Gly Arg Cys Glu Ala Val Leu
420

<210> 418

<211> 33

<212> PRT

<213> Homo sapiens

<400> 418

Met Leu Glu Thr Leu Ser Arg Gln Trp Ile Val Ser His Arg Met Glu
1 5 10 15

Met Trp Leu Leu Ile Leu Val Ala Tyr Met Phe Gln Arg Asn Val Asn
20 25 30

Ser

<210> 419

<211> 390

<212> PRT

<213> Homo sapiens

<400> 419

Val His Met Pro Thr Lys Ala Val Asp Pro Glu Ala Phe Met Asn Ile
1 5 10 15

Ser Glu Ile Ile Gln His Gln Gly Tyr Pro Cys Glu Glu Tyr Glu Val
20 25 30

Ala Thr Glu Asp Gly Tyr Ile Leu Ser Val Asn Arg Ile Pro Arg Gly
35 40 45

Leu Val Gln Pro Lys Lys Thr Gly Ser Arg Pro Val Val Leu Leu Gln
50 55 60

His Gly Leu Val Gly Gly Ala Ser Asn Trp Ile Ser Asn Leu Pro Asn
65 70 75 80

Asn Ser Leu Gly Phe Ile Leu Ala Asp Ala Gly Phe Asp Val Trp Met
85 90 95

Gly Asn Ser Arg Gly Asn Ala Trp Ser Arg Lys His Lys Thr Leu Ser
100 105 110

Ile Asp Gln Asp Glu Phe Trp Ala Phe Ser Tyr Asp Glu Met Ala Arg
115 120 125

Phe Asp Leu Pro Ala Val Ile Asn Phe Ile Leu Gln Lys Thr Gly Gln
130 135 140

Glu Lys Ile Tyr Tyr Val Gly Tyr Ser Gln Gly Thr Thr Met Gly Phe
145 150 155 160

Ile Ala Phe Ser Thr Met Pro Glu Leu Ala Gln Lys Ile Lys Met Tyr
165 170 175

Phe Ala Leu Ala Pro Ile Ala Thr Val Lys His Ala Lys Ser Pro Gly
180 185 190

Thr Lys Phe Leu Leu Leu Pro Asp Met Met Ile Lys Gly Leu Phe Gly
195 200 205

Lys Lys Glu Phe Leu Tyr Gln Thr Arg Phe Leu Arg Gln Leu Val Ile
210 215 220

Tyr Leu Cys Gly Gln Val Ile Leu Asp Gln Ile Cys Ser Asn Ile Met
225 230 235 240

Leu Leu Leu Gly Gly Phe Asn Thr Asn Asn Met Asn Met Ser Arg Ala
245 250 255

Ser Val Tyr Ala Ala His Thr Leu Ala Gly Thr Ser Val Gln Asn Ile
260 265 270

Leu His Trp Ser Gln Ala Val Asn Ser Gly Glu Leu Arg Ala Phe Asp
275 280 285

Trp Gly Ser Glu Thr Lys Asn Leu Glu Lys Cys Asn Gln Pro Thr Pro
290 295 300

Val Arg Tyr Arg Val Arg Asp Met Thr Val Pro Thr Ala Met Trp Thr
305 310 315 320

Gly Gly Gln Asp Trp Leu Ser Asn Pro Glu Asp Val Lys Met Leu Leu
325 330 335

Ser Glu Val Thr Asn Leu Ile Tyr His Lys Asn Ile Pro Glu Trp Ala
340 345 350

His Val Asp Phe Ile Trp Gly Leu Asp Ala Pro His Arg Met Tyr Asn
355 360 365

Glu Ile Ile His Leu Met Gln Gln Glu Glu Thr Asn Leu Ser Gln Gly
370 375 380

Arg Cys Glu Ala Val Leu
385 390

<210> 420

<211> 221

<212> PRT

<213> Homo sapiens

<400> 420

Val His Met Pro Thr Lys Ala Val Asp Pro Glu Ala Phe Met Asn Ile
1 5 10 15

Ser Glu Ile Ile Gln His Gln Gly Tyr Pro Cys Glu Glu Tyr Glu Val
20 25 30

Ala Thr Glu Asp Gly Tyr Ile Leu Ser Val Asn Arg Ile Pro Arg Gly
35 40 45

Leu Val Gln Pro Lys Lys Thr Gly Ser Arg Pro Val Val Leu Leu Gln
50 55 60

His Gly Leu Val Gly Gly Ala Ser Asn Trp Ile Ser Asn Leu Pro Asn
65 70 75 80

Asn Ser Leu Gly Phe Ile Leu Ala Asp Ala Gly Phe Asp Val Trp Met

TOP SECRET//NOFORN

85

90

95

Gly Asn Ser Arg Gly Asn Ala Trp Ser Arg Lys His Lys Thr Leu Ser
100 105 110

Ile Asp Gln Asp Glu Phe Trp Ala Phe Ser Tyr Asp Glu Met Ala Arg
115 120 125

Phe Asp Leu Pro Ala Val Ile Asn Phe Ile Leu Gln Lys Thr Gly Gln
130 135 140

Glu Lys Ile Tyr Tyr Val Gly Tyr Ser Gln Gly Thr Thr Met Gly Phe
145 150 155 160

Ile Ala Phe Ser Thr Met Pro Glu Leu Ala Gln Lys Ile Lys Met Tyr
165 170 175

Phe Ala Leu Ala Pro Ile Ala Thr Val Lys His Ala Lys Ser Pro Gly
180 185 190

Thr Lys Phe Leu Leu Leu Pro Asp Met Met Ile Lys Gly Leu Phe Gly
195 200 205

Lys Lys Glu Phe Leu Tyr Gln Thr Arg Phe Leu Arg Gln
210 215 220

<210> 421

<211> 25

<212> PRT

<213> Homo sapiens

<400> 421

Leu Val Ile Tyr Leu Cys Gly Gln Val Ile Leu Asp Gln Ile Cys Ser
1 5 10 15

Asn Ile Met Leu Leu Gly Gly Phe
20 25

<210> 422

<211> 144

<212> PRT

<213> Homo sapiens

<400> 422

Asn Thr Asn Asn Met Asn Met Ser Arg Ala Ser Val Tyr Ala Ala His
1 5 10 15

Thr Leu Ala Gly Thr Ser Val Gln Asn Ile Leu His Trp Ser Gln Ala
20 25 30

Val Asn Ser Gly Glu Leu Arg Ala Phe Asp Trp Gly Ser Glu Thr Lys
35 40 45

Asn Leu Glu Lys Cys Asn Gln Pro Thr Pro Val Arg Tyr Arg Val Arg
50 55 60

Asp Met Thr Val Pro Thr Ala Met Trp Thr Gly Gly Gln Asp Trp Leu
65 70 75 80

Ser Asn Pro Glu Asp Val Lys Met Leu Leu Ser Glu Val Thr Asn Leu
85 90 95

Ile Tyr His Lys Asn Ile Pro Glu Trp Ala His Val Asp Phe Ile Trp
100 105 110

Gly Leu Asp Ala Pro His Arg Met Tyr Asn Glu Ile Ile His Leu Met
115 120 125

Gln Gln Glu Glu Thr Asn Leu Ser Gln Gly Arg Cys Glu Ala Val Leu
130 135 140

<210> 423
<211> 2133
<212> DNA
<213> Homo sapiens

<400> 423
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ttcccgtgg acaccacttt ggccagcatc atcatgatct ttctgactgc actggccacg 180
ttcatcgta tcctgcctgg cattcgggga aagacgaggc tggctggct gcttcgggtg 240
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gatattgggc tgcaggctgg gctgggtgga gtcaacatca cactcacagg gaccccggtg 420
cagcagctga atgagaccat caattacaac gaggagttca cctggcgcct gggtgagaac 480
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ttttaaaaaa aaaaaaaaaa aaaggcgccg cgc 2133

<210> 424
<211> 1029
<212> DNA
<213> Homo sapiens

<400> 424
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atcctgcctg gcattcgggg aaagacgagg ctgttctggc tgcttcgggt ggtgaccago 180
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ctgcaggtcg ggctgggtgg agtcaacatc acactcacag ggaccccccgt gcagcagctg 360
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gagtgtgcaa aggctctgga gaaggggctg ccagaccctg tgggtgatct agctgagaag 480
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cctgtgtgg tatatgggtgg ctacatgcta ttggccacgg gcatcttcca gctgttggt 660
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tctgtgtgc atactcacca tggcctgac ttctggatca cattgaccac aggactgctg 780
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tgtgcttta

1029

<210> 425

<211> 343

<212> PRT

<213> Homo sapiens

<400> 425

Met Ala Thr Leu Gly His Thr Phe Pro Phe Tyr Ala Gly Pro Lys Pro
1 5 10 15

Thr Phe Pro Met Asp Thr Thr Leu Ala Ser Ile Ile Met Ile Phe Leu
20 25 30

Thr Ala Leu Ala Thr Phe Ile Val Ile Leu Pro Gly Ile Arg Gly Lys
35 40 45

Thr Arg Leu Phe Trp Leu Leu Arg Val Val Thr Ser Leu Phe Ile Gly
50 55 60

Ala Ala Ile Leu Ala Val Asn Phe Ser Ser Glu Trp Ser Val Gly Gln
65 70 75 80

Val Ser Thr Asn Thr Ser Tyr Lys Ala Phe Ser Ser Glu Trp Ile Ser
85 90 95

Ala Asp Ile Gly Leu Gln Val Gly Leu Gly Gly Val Asn Ile Thr Leu
100 105 110

Thr Gly Thr Pro Val Gln Gln Leu Asn Glu Thr Ile Asn Tyr Asn Glu
115 120 125

Glu Phe Thr Trp Arg Leu Gly Glu Asn Tyr Ala Glu Glu Cys Ala Lys
130 135 140

Ala Leu Glu Lys Gly Leu Pro Asp Pro Val Leu Tyr Leu Ala Glu Lys
145 150 155 160

Phe Thr Pro Arg Ser Pro Cys Gly Leu Tyr Arg Gln Tyr Arg Leu Ala
165 170 175

Gly His Tyr Thr Ser Ala Met Leu Trp Val Ala Phe Leu Cys Trp Leu
180 185 190

Leu Ala Asn Val Met Leu Ser Met Pro Val Leu Val Tyr Gly Gly Tyr
195 200 205

Q
S
E
D
G
T
D
P
E
R
E
B
F

Met Leu Leu Ala Thr Gly Ile Phe Gln Leu Leu Ala Leu Leu Phe Phe
210 215 220

Ser Met Ala Thr Ser Leu Thr Ser Pro Cys Pro Leu His Leu Gly Ala
225 230 235 240

Ser Val Leu His Thr His His Gly Pro Ala Phe Trp Ile Thr Leu Thr
245 250 255

Thr Gly Leu Leu Cys Val Leu Leu Gly Leu Ala Met Ala Val Ala His
260 265 270

Arg Met Gln Pro His Arg Leu Lys Ala Phe Phe Asn Gln Ser Val Asp
275 280 285

Glu Asp Pro Met Leu Glu Trp Ser Pro Glu Glu Gly Gly Leu Leu Ser
290 295 300

Pro Arg Tyr Arg Ser Met Ala Asp Ser Pro Lys Ser Gln Asp Ile Pro
305 310 315 320

Leu Ser Glu Ala Ser Ser Thr Lys Ala Tyr Cys Lys Glu Ala His Pro
325 330 335

Lys Asp Pro Asp Cys Ala Leu
340

<210> 426

<211> 23

<212> PRT

<213> Homo sapiens

<400> 426

Met Ala Thr Leu Gly His Thr Phe Pro Phe Tyr Ala Gly Pro Lys Pro
1 5 10 15

Thr Phe Pro Met Asp Thr Thr
20

<210> 427

<211> 112

<212> PRT

<213> Homo sapiens

<400> 427

Asn Phe Ser Ser Glu Trp Ser Val Gly Gln Val Ser Thr Asn Thr Ser

1 5 10 15
Tyr Lys Ala Phe Ser Ser Glu Trp Ile Ser Ala Asp Ile Gly Leu Gln
20 25 30
Val Gly Leu Gly Gly Val Asn Ile Thr Leu Thr Gly Thr Pro Val Gln
35 40 45
Gln Leu Asn Glu Thr Ile Asn Tyr Asn Glu Glu Phe Thr Trp Arg Leu
50 55 60
Gly Glu Asn Tyr Ala Glu Glu Cys Ala Lys Ala Leu Glu Lys Gly Leu
65 70 75 80
Pro Asp Pro Val Leu Tyr Leu Ala Glu Lys Phe Thr Pro Arg Ser Pro
85 90 95
Cys Gly Leu Tyr Arg Gln Tyr Arg Leu Ala Gly His Tyr Thr Ser Ala
100 105 110

<210> 428
<211> 22
<212> PRT
<213> Homo sapiens

<400> 428
Thr Ser Leu Thr Ser Pro Cys Pro Leu His Leu Gly Ala Ser Val Leu
1 5 10 15
His Thr His His Gly Pro
20

<210> 429
<211> 19
<212> PRT
<213> Homo sapiens

<400> 429
Leu Ala Ser Ile Ile Met Ile Phe Leu Thr Ala Leu Ala Thr Phe Ile
1 5 10 15
Val Ile Leu

<210> 430

<211> 20

<212> PRT

<213> Homo sapiens

<400> 430

Leu Phe Trp Leu Leu Arg Val Val Thr Ser Leu Phe Ile Gly Ala Ala
1 5 10 15

Ile Leu Ala Val

20

<210> 431

<211> 22

<212> PRT

<213> Homo sapiens

<400> 431

Met Leu Trp Val Ala Phe Leu Cys Trp Leu Leu Ala Asn Val Met Leu
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Ser Met Pro Val Leu Val

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<210> 432

<211> 17

<212> PRT

<213> Homo sapiens

<400> 432

Leu Ala Thr Gly Ile Phe Gln Leu Leu Ala Leu Leu Phe Phe Ser Met
1 5 10 15

Ala

<210> 433

<211> 22

<212> PRT

<213> Homo sapiens

<400> 433

Ala Phe Trp Ile Thr Leu Thr Thr Gly Leu Leu Cys Val Leu Leu Gly

1 5 10 15

Leu Ala Met Ala Val Ala
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<210> 434
<211> 8
<212> PRT
<213> Homo sapiens

<400> 434
Pro Gly Ile Arg Gly Lys Thr Arg
1 5

<210> 435
<211> 6
<212> PRT
<213> Homo sapiens

<400> 435
Tyr Gly Gly Tyr Met Leu
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<210> 436
<211> 72
<212> PRT
<213> Homo sapiens

<400> 436
His Arg Met Gln Pro His Arg Leu Lys Ala Phe Phe Asn Gln Ser Val
1 5 10 15

Asp Glu Asp Pro Met Leu Glu Trp Ser Pro Glu Glu Gly Gly Leu Leu
20 25 30

Ser Pro Arg Tyr Arg Ser Met Ala Asp Ser Pro Lys Ser Gln Asp Ile
35 40 45

Pro Leu Ser Glu Ala Ser Ser Thr Lys Ala Tyr Cys Lys Glu Ala His
50 55 60

Pro Lys Asp Pro Asp Cys Ala Leu
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<210> 437
<211> 4928
<212> DNA
<213> Mus sp.

<400> 437
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<210> 438
<211> 1410
<212> DNA
<213> Mus sp.

F0E7D0

<400> 438

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<210> 439

<211> 470

<212> PRT

<213> Mus sp.

<400> 439

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Thr Leu Ala Ala Arg Pro Ala Pro Gly Pro Arg Ser Gly Pro Glu Cys
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Phe Thr Ala Asn Gly Ala Asp Tyr Arg Gly Thr Gln Ser Trp Thr Ala
35 40 45

Leu Gln Gly Gly Lys Pro Cys Leu Phe Trp Asn Glu Thr Phe Gln His
50 55 60

Pro Tyr Asn Thr Leu Lys Tyr Pro Asn Gly Glu Gly Gly Leu Gly Glu
65 70 75 80

His Asn Tyr Cys Arg Asn Pro Asp Gly Asp Val Ser Pro Trp Cys Tyr
85 90 95

Val Ala Glu His Glu Asp Gly Val Tyr Trp Lys Tyr Cys Glu Ile Pro
100 105 110

Ala Cys Gln Met Pro Gly Asn Leu Gly Cys Tyr Lys Asp His Gly Asn
115 120 125

Pro Pro Pro Leu Thr Gly Thr Ser Lys Thr Ser Asn Lys Leu Thr Ile
130 135 140

Gln Thr Cys Ile Ser Phe Cys Arg Ser Gln Arg Phe Lys Phe Ala Gly
145 150 155 160

Met Glu Ser Gly Tyr Ala Cys Phe Cys Gly Asn Asn Pro Asp Tyr Trp
165 170 175

Lys His Gly Glu Ala Ala Ser Thr Glu Cys Asn Ser Val Cys Phe Gly
180 185 190

Asp His Thr Gln Pro Cys Gly Gly Asp Gly Arg Ile Ile Leu Phe Asp
195 200 205

Thr Leu Val Gly Ala Cys Gly Gly Asn Tyr Ser Ala Met Ala Ala Val
210 215 220

Val Tyr Ser Pro Asp Phe Pro Asp Thr Tyr Ala Thr Gly Arg Val Cys
225 230 235 240

Tyr Trp Thr Ile Arg Val Pro Gly Ala Ser Arg Ile His Phe Asn Phe
245 250 255

Thr Leu Phe Asp Ile Arg Asp Ser Ala Asp Met Val Glu Leu Leu Asp
260 265 270

Gly Tyr Thr His Arg Val Leu Val Arg Leu Ser Gly Arg Ser Arg Pro
275 280 285

Pro Leu Ser Phe Asn Val Ser Leu Asp Phe Val Ile Leu Tyr Phe Phe
290 295 300

Ser Asp Arg Ile Asn Gln Ala Gln Gly Phe Ala Val Leu Tyr Gln Ala
305 310 315 320

Thr Lys Glu Glu Pro Pro Gln Glu Arg Pro Ala Val Asn Gln Thr Leu
325 330 335

PDB ID: 2E7D

Ala Glu Val Ile Thr Glu Gln Ala Asn Leu Ser Val Ser Ala Ala His
340 345 350

Ser Ser Lys Val Leu Tyr Val Ile Thr Pro Ser Pro Ser His Pro Pro
355 360 365

Gln Thr Ala Gln Val Ala Ile Pro Gly His Arg Gln Leu Gly Pro Thr
370 375 380

Ala Thr Glu Trp Lys Asp Gly Leu Cys Thr Ala Trp Arg Pro Ser Ser
385 390 395 400

Ser Ser Gln Ser Gln Gln Leu Ser Gln Arg Phe Phe Cys Met Ser His
405 410 415

Leu Asn Leu Ile Glu Ser Leu His Gln Glu Thr Leu Gly Thr Val Val
420 425 430

Ser Leu Gly Leu Leu Glu Ile Ser Gly Pro Phe Ser Met Asn Leu Pro
435 440 445

Leu Gln Ser Pro Ser Leu Arg Arg Ser Ser Arg Val Arg Val Asn Lys
450 455 460

Met Thr Ala Ile Pro Ser
465 470

<210> 440
<211> 760
<212> PRT
<213> Mus sp.

<400> 440
Met Ala Leu Pro Ser Leu Gly Gln Asp Ser Trp Ser Leu Leu Arg Val
1 5 10 15

Phe Phe Phe Gln Leu Phe Leu Leu Pro Ser Leu Pro Pro Ala Ser Gly
20 25 30

Thr Gly Gly Gln Gly Pro Met Pro Arg Val Lys Tyr His Ala Gly Asp
35 40 45

Gly His Arg Ala Leu Ser Phe Phe Gln Gln Lys Gly Leu Arg Asp Phe
50 55 60

Asp Thr Leu Leu Leu Ser Asp Asp Gly Asn Thr Leu Tyr Val Gly Ala
65 70 75 80

Arg Glu Thr Val Leu Ala Leu Asn Ile Gln Asn Pro Gly Ile Pro Arg
85 90 95

Leu Lys Asn Met Ile Pro Trp Pro Ala Ser Glu Arg Lys Lys Thr Glu
100 105 110

Cys Ala Phe Lys Lys Ser Asn Glu Thr Gln Cys Phe Asn Phe Ile
115 120 125

Arg Val Leu Val Ser Tyr Asn Ala Thr His Leu Tyr Ala Cys Gly Thr
130 135 140

Phe Ala Phe Ser Pro Ala Cys Thr Phe Ile Glu Leu Gln Asp Ser Leu
145 150 155 160

Leu Leu Pro Ile Leu Ile Asp Lys Val Met Asp Gly Lys Gly Gln Ser
165 170 175

Pro Leu Thr Leu Phe Thr Ser Thr Gln Ala Val Leu Val Asp Gly Met
180 185 190

Leu Tyr Ser Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile Leu
195 200 205

Met Arg Thr Leu Gly Ser His Pro Val Leu Lys Thr Asp Ile Phe Leu
210 215 220

Arg Trp Leu His Ala Asp Ala Ser Phe Val Ala Ala Ile Pro Ser Thr
225 230 235 240

Gln Val Val Tyr Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp Phe
245 250 255

Phe Glu Glu Leu Tyr Ile Ser Arg Val Ala Gln Val Cys Lys Asn Asp
260 265 270

Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu Lys
275 280 285

Ala Gln Leu Leu Cys Ala Gln Pro Gly Gln Leu Pro Phe Asn Ile Ile
290 295 300

Arg His Ala Val Leu Leu Pro Ala Asp Ser Pro Ser Val Ser Arg Ile
305 310 315 320

Tyr Ala Val Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser Ser
325 330 335

PROTEIN SEQUENCE

Ala Val Cys Ala Phe Ser Leu Thr Asp Ile Glu Arg Val Phe Lys Gly
340 345 350

Lys Tyr Lys Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr Arg
355 360 365

Gly Ser Glu Val Ser Pro Arg Pro Gly Ser Cys Ser Met Gly Pro Ser
370 375 380

Ser Asp Lys Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp Glu
385 390 395 400

His Val Val Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr Thr
405 410 415

Arg Leu Ala Val Glu Ser Ala Arg Gly Leu Asp Gly Ser Ser His Val
420 425 430

Val Met Tyr Leu Gly Thr Ser Thr Gly Pro Leu His Lys Ala Val Val
435 440 445

Pro Gln Asp Ser Ser Ala Tyr Leu Val Glu Glu Ile Gln Leu Ser Pro
450 455 460

Asp Ser Glu Pro Val Arg Asn Leu Gln Leu Ala Pro Ala Gln Gly Ala
465 470 475 480

Val Phe Ala Gly Phe Ser Gly Gly Ile Trp Arg Val Pro Arg Ala Asn
485 490 495

Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp Pro
500 505 510

His Cys Ala Trp Asp Pro Glu Ser Arg Leu Cys Ser Leu Leu Ser Gly
515 520 525

Ser Thr Lys Pro Trp Lys Gln Asp Met Glu Arg Gly Asn Pro Glu Trp
530 535 540

Val Cys Thr Arg Gly Pro Met Ala Arg Ser Pro Arg Arg Gln Ser Pro
545 550 555 560

Pro Gln Leu Ile Lys Glu Val Leu Thr Val Pro Asn Ser Ile Leu Glu
565 570 575

Leu Arg Cys Pro His Leu Ser Ala Leu Ala Ser Tyr His Trp Ser His
580 585 590

PDB ID: 2C1D

Gly Arg Ala Lys Ile Ser Glu Ala Ser Ala Thr Val Tyr Asn Gly Ser
595 600 605

Leu Leu Leu Leu Pro Gln Asp Gly Val Gly Gly Leu Tyr Gln Cys Val
610 615 620

Ala Thr Glu Asn Gly Tyr Ser Tyr Pro Val Val Ser Tyr Trp Val Asp
625 630 635 640

Ser Gln Asp Gln Pro Leu Ala Leu Asp Pro Glu Leu Ala Gly Val Pro
645 650 655

Arg Glu Arg Val Gln Val Pro Leu Thr Arg Val Gly Gly Ala Ser
660 665 670

Met Ala Ala Gln Arg Ser Tyr Trp Pro His Phe Leu Ile Val Thr Val
675 680 685

Leu Leu Ala Ile Val Leu Leu Gly Val Leu Thr Leu Leu Leu Ala Ser
690 695 700

Pro Leu Gly Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Gly Met
705 710 715 720

Leu Pro Pro Arg Glu Lys Ala Pro Leu Ser Arg Asp Gln His Leu Gln
725 730 735

Pro Ser Lys Asp His Arg Thr Ser Ala Ser Asp Val Asp Ala Asp Asn
740 745 750

Asn His Leu Gly Ala Glu Val Ala
755 760

<210> 441

<211> 3046

<212> PRT

<213> Mus sp.

<400> 441

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Ala Gly Gly Gly Gly Thr Cys Thr Gly Thr Ala Cys Thr Gly Cys Thr
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Gly Gly Gly Gly Ala Ala Cys Cys Ala Thr Cys Thr Gly Gly Thr Gly

FOLIC ACID

35

40

45

Ala Cys Cys Ala Thr Cys Thr Cys Ala Gly Gly Cys Thr Gly Ala Cys
50 55 60

Cys Ala Thr Gly Gly Cys Cys Cys Thr Ala Cys Cys Ala Thr Cys Cys
65 70 75 80

Cys Thr Gly Gly Cys Cys Ala Gly Gly Ala Cys Thr Cys Ala Thr
85 90 95

Gly Gly Ala Gly Thr Cys Thr Cys Cys Thr Gly Cys Gly Thr Gly Thr
100 105 110

Thr Thr Thr Thr Thr Cys Thr Thr Cys Cys Ala Ala Cys Thr Cys
115 120 125

Thr Thr Cys Cys Thr Gly Cys Thr Gly Cys Cys Ala Thr Cys Ala Cys
130 135 140

Thr Gly Cys Cys Ala Cys Cys Thr Gly Cys Thr Thr Cys Thr Gly Gly
145 150 155 160

Gly Ala Cys Thr Gly Gly Thr Gly Gly Thr Cys Ala Gly Gly Gly
165 170 175

Cys Cys Cys Ala Thr Gly Cys Cys Cys Ala Gly Ala Gly Thr Cys Ala
180 185 190

Ala Ala Thr Ala Cys Cys Ala Thr Gly Cys Thr Gly Gly Ala Gly Ala
195 200 205

Cys Gly Gly Gly Cys Ala Cys Ala Gly Gly Gly Cys Cys Cys Thr Cys
210 215 220

Ala Gly Cys Thr Thr Cys Thr Cys Cys Ala Ala Cys Ala Ala Ala
225 230 235 240

Ala Ala Gly Gly Cys Cys Thr Cys Cys Gly Ala Gly Ala Cys Thr Thr
245 250 255

Thr Gly Ala Cys Ala Cys Gly Cys Thr Gly Cys Thr Cys Cys Thr Gly
260 265 270

Ala Gly Thr Gly Ala Cys Gly Ala Thr Gly Gly Cys Ala Ala Cys Ala
275 280 285

Cys Thr Cys Thr Cys Thr Ala Thr Gly Thr Gly Gly Gly Gly Cys

FOLIO 25250

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Thr Cys Gly Ala Gly Ala Gly Ala Cys Cys Gly Thr Cys Cys Thr Gly
305 310 315 320
Gly Cys Cys Thr Thr Gly Ala Ala Thr Ala Thr Cys Cys Ala Gly Ala
325 330 335
Ala Cys Cys Cys Ala Gly Gly Ala Ala Thr Cys Cys Cys Ala Ala Gly
340 345 350
Gly Cys Thr Ala Ala Ala Gly Ala Ala Cys Ala Thr Gly Ala Thr Ala
355 360 365
Cys Cys Cys Thr Gly Gly Cys Cys Ala Gly Cys Cys Cys Ala Gly Thr Gly
370 375 380
Ala Gly Ala Gly Ala Ala Ala Ala Ala Gly Ala Cys Cys Gly Ala
385 390 395 400
Ala Thr Gly Thr Gly Cys Cys Thr Thr Ala Ala Gly Ala Ala Gly
405 410 415
Ala Ala Gly Ala Gly Cys Ala Ala Thr Gly Ala Gly Ala Cys Ala Cys
420 425 430
Ala Gly Thr Gly Thr Thr Cys Ala Ala Cys Thr Thr Cys Ala Thr
435 440 445
Thr Cys Gly Ala Gly Thr Cys Cys Thr Gly Gly Thr Cys Thr Cys Thr
450 455 460
Thr Ala Cys Ala Ala Thr Gly Cys Thr Ala Cys Thr Cys Ala Cys Cys
465 470 475 480
Thr Cys Thr Ala Thr Gly Cys Cys Thr Gly Thr Gly Gly Ala Cys
485 490 495
Cys Thr Thr Thr Gly Cys Cys Thr Thr Cys Ala Gly Cys Cys Cys Thr
500 505 510
Gly Cys Cys Thr Gly Thr Ala Cys Cys Thr Thr Cys Ala Thr Thr Gly
515 520 525
Ala Ala Cys Thr Cys Cys Ala Ala Gly Ala Thr Thr Cys Cys Cys Thr
530 535 540
Cys Cys Thr Gly Thr Thr Gly Cys Cys Cys Ala Thr Cys Thr Thr Gly

1 2 3 4 5 6 7 8 9 10

545 550 555 560
Ala Thr Ala Gly Ala Cys Ala Ala Gly Gly Thr Cys Ala Thr Gly Gly
565 570 575

Ala Cys Gly Gly Ala Ala Gly Gly Cys Cys Ala Ala Ala Gly
580 585 590

Cys Cys Cys Thr Thr Gly Ala Cys Cys Cys Thr Gly Thr Thr Cys
595 600 605

Ala Cys Ala Ala Gly Cys Ala Cys Ala Cys Ala Ala Gly Cys Thr Gly
610 615 620

Thr Cys Thr Thr Gly Gly Thr Cys Gly Ala Thr Gly Gly Ala Thr
625 630 635 640

Gly Cys Thr Thr Ala Thr Thr Cys Cys Gly Gly Cys Ala Cys Cys
645 650 655

Ala Thr Gly Ala Ala Cys Ala Ala Cys Thr Thr Cys Cys Thr Gly Gly
660 665 670

Gly Cys Ala Gly Cys Gly Ala Gly Cys Cys Cys Ala Thr Cys Cys Thr
675 680 685

Gly Ala Thr Gly Cys Gly Gly Ala Cys Ala Cys Thr Gly Gly Ala
690 695 700

Thr Cys Cys Cys Ala Thr Cys Cys Thr Gly Thr Thr Cys Thr Cys Ala
705 710 715 720

Ala Gly Ala Cys Thr Gly Ala Cys Ala Thr Cys Thr Thr Cys Thr Thr
725 730 735

Ala Cys Gly Cys Thr Gly Gly Cys Thr Gly Cys Ala Cys Gly Cys Gly
740 745 750

Gly Ala Thr Gly Cys Cys Thr Cys Cys Thr Thr Cys Gly Thr Gly Gly
755 760 765

Cys Ala Gly Cys Cys Ala Thr Thr Cys Cys Ala Thr Cys Cys Ala Cys
770 775 780

Cys Cys Ala Gly Gly Thr Cys Gly Thr Cys Thr Ala Thr Thr Thr Cys
785 790 795 800

Thr Thr Cys Thr Thr Gly Ala Gly Ala Gly Ala Cys Ala Gly

FOLIO 10

805 810 815
Cys Cys Ala Gly Cys Gly Ala Gly Thr Thr Thr Gly Ala Cys Thr Thr
820 825 830

Cys Thr Thr Thr Gly Ala Ala Gly Ala Gly Cys Thr Gly Thr Ala Thr
835 840 845

Ala Thr Ala Thr Cys Cys Ala Gly Gly Gly Thr Gly Gly Cys Thr Cys
850 855 860

Ala Ala Gly Thr Cys Thr Gly Cys Ala Ala Gly Ala Ala Cys Gly Ala
865 870 875 880

Cys Gly Thr Gly Gly Cys Gly Gly Thr Gly Ala Ala Ala Ala Gly
885 890 895

Cys Thr Gly Cys Thr Gly Cys Ala Gly Ala Ala Gly Ala Ala Gly Thr
900 905 910

Gly Gly Ala Cys Cys Ala Cys Cys Thr Thr Cys Cys Thr Cys Ala Ala
915 920 925

Ala Gly Cys Cys Cys Ala Gly Thr Thr Gly Cys Thr Cys Thr Gly Cys
930 935 940

Gly Cys Thr Cys Ala Gly Cys Cys Ala Gly Gly Gly Cys Ala Gly Cys
945 950 955 960

Thr Gly Cys Cys Ala Thr Thr Cys Ala Ala Cys Ala Thr Cys Ala Thr
965 970 975

Cys Cys Gly Cys Cys Ala Cys Gly Cys Gly Gly Thr Cys Cys Thr Gly
980 985 990

Cys Thr Gly Cys Cys Gly Cys Cys Gly Ala Thr Thr Cys Thr Cys
995 1000 1005

Cys Cys Thr Cys Thr Gly Thr Thr Cys Cys Cys Gly Cys Ala Thr
1010 1015 1020

Cys Thr Ala Cys Gly Cys Ala Gly Thr Cys Thr Thr Ala Cys Cys
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Thr Cys Cys Cys Ala Gly Thr Gly Gly Cys Ala Gly Gly Thr Thr Gly
1045 1050 1055

Gly Cys Gly Gly Ala Cys Cys Ala Gly Gly Ala Gly Cys Thr Cys

1060 1065 1070
Ala Gly Cys Ala Gly Thr Cys Thr Gly Thr Gly Cys Cys Thr Thr Cys
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Thr Cys Thr Cys Thr Cys Ala Cys Gly Gly Ala Cys Ala Thr Thr Gly
1090 1095 1100

Ala Gly Cys Gly Ala Gly Thr Cys Thr Thr Ala Ala Ala Gly Gly
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Gly Ala Ala Gly Thr Ala Cys Ala Ala Gly Gly Ala Gly Cys Thr Gly
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1140 1145 1150

Gly Cys Thr Gly Gly Ala Cys Cys Ala Cys Thr Thr Ala Cys Cys Gly
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1170 1175 1180

Cys Cys Gly Ala Gly Gly Cys Cys Ala Gly Gly Cys Ala Gly Thr Thr
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Gly Cys Thr Cys Cys Ala Thr Gly Gly Cys Cys Cys Cys Thr Cys
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Cys Thr Cys Thr Gly Ala Cys Ala Ala Ala Gly Cys Cys Thr Thr Gly
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Ala Thr Thr Thr Cys Thr Gly Ala Thr Gly Gly Ala Thr Gly Ala
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1265 1270 1275 1280

Cys Cys Cys Cys Thr Gly Cys Thr Gly Gly Thr Gly Ala Ala Gly Thr
1285 1290 1295

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Ala Cys Gly Gly Cys Thr Thr Gly Cys Thr Gly Thr Gly Ala Gly

D E B A C G D

1315 1320 1325
Thr Cys Ala Gly Cys Thr Cys Gly Gly Gly Cys Cys Thr Thr Gly
1330 1335 1340

Ala Thr Gly Gly Ala Gly Cys Ala Gly Cys Cys Ala Thr Gly Thr
1345 1350 1355 1360

Gly Gly Thr Cys Ala Thr Gly Thr Ala Thr Cys Thr Gly Gly Thr
1365 1370 1375

Ala Cys Cys Thr Cys Cys Ala Cys Gly Gly Thr Cys Cys Cys Cys
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Thr Gly Cys Ala Cys Ala Ala Gly Gly Cys Thr Gly Thr Gly Thr
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Cys Gly Ala Ala Ala Cys Cys Thr Gly Cys Ala Gly Cys Thr Gly Gly
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Cys Cys Cys Cys Cys Gly Cys Cys Cys Ala Gly Gly Gly Thr Gly Cys
1490 1495 1500

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Ala Gly Cys Thr Gly Thr Gly Gly Ala Cys Thr Gly Thr Gly

FOLKONOMI

1570 1575 1580
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Gly Cys Gly Gly Cys Ala Ala Cys Cys Cys Gly Gly Ala Gly Thr Gly
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1730 1735 1740

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1745 1750 1755 1760

Gly Ala Ala Gly Thr Cys Cys Thr Gly Ala Cys Ala Gly Thr Cys Cys
1765 1770 1775

Cys Cys Ala Ala Cys Thr Cys Cys Ala Thr Cys Cys Thr Gly Gly Ala
1780 1785 1790

Gly Cys Thr Gly Cys Gly Cys Thr Gly Cys Cys Cys Cys Cys Ala Cys
1795 1800 1805

Cys Thr Gly Thr Cys Ala Gly Cys Ala Cys Thr Gly Gly Cys Cys Thr
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Cys Thr Thr Ala Cys Cys Ala Cys Thr Gly Gly Ala Gly Thr Cys Ala

DRAFT 05/2020

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Cys Cys Thr Cys Thr Gly Cys Thr Gly Cys Thr Gly Cys Cys Gly			
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Gly Gly Cys Gly Ala Cys Thr Gly Ala Gly Ala Ala Cys Gly Gly Cys			
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Cys Thr Gly Gly Cys Gly Cys Thr Gly Gly Ala Cys Cys Cys Thr Gly			
2005	2010	2015	
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2020	2025	2030	
Cys Cys Gly Thr Gly Ala Gly Cys Gly Thr Gly Thr Gly Cys Ala Gly			
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Thr Cys Gly Gly Ala Gly Gly Cys Gly Ala Gly Cys Thr Thr Cys			
2065	2070	2075	2080
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F O O D S C I E N C E

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2090

2095

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Cys Cys Cys Ala Cys Thr Gly Gly Gly Cys Gly Cys Thr Gly
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2195 2200 2205

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2245 2250 2255

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Cys Ala Ala Cys Cys Ala Thr Cys Thr Gly Gly Cys Gly Cys Cys
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FOLIC ACID

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2370 2375 2380
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2675 2680 2685

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2690 2695 2700

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Cys Thr Thr Gly Thr Gly Thr Thr Cys Cys Thr Thr Thr Ala Cys
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Cys Ala Gly Thr Cys Gly Gly Cys Cys Ala Thr Ala Cys Thr Gly
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Thr Gly Ala Ala Gly Thr Cys Thr Ala Ala Cys Cys Ala Cys Cys Thr
2835 2840 2845

Thr Cys Cys Thr Thr Cys Thr Thr Gly Gly Thr Thr Cys Ala Gly Thr

TOP SECRET

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Thr Ala Thr Thr Gly Thr Cys Thr Cys Thr Gly Cys Cys Cys Thr Gly		
2885	2890	2895
Gly Cys Thr Ala Gly Ala Ala Thr Gly Gly Gly Gly Cys Ala Thr		
2900	2905	2910
Ala Ala Thr Cys Thr Gly Ala Gly Cys Cys Thr Thr Gly Thr Thr Cys		
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Cys Cys Thr Thr Gly Thr Cys Cys Ala Gly Thr Gly Thr Gly Gly Cys		
2930	2935	2940
Thr Gly Ala Cys Cys Cys Thr Thr Gly Ala Cys Cys Thr Cys Thr Thr		
2945	2950	2955
2960		
Cys Cys Thr Thr Cys Cys Thr Cys Cys Thr Cys Cys Cys Thr Thr Thr		
2965	2970	2975
Gly Thr Thr Thr Gly Gly Ala Thr Thr Cys Ala Gly Ala Ala		
2980	2985	2990
Ala Ala Cys Thr Gly Cys Thr Thr Gly Thr Cys Ala Cys Ala Gly Ala		
2995	3000	3005
Cys Ala Ala Thr Thr Ala Thr Thr Thr Thr Thr Ala Thr Thr		
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Thr Thr Ala Ala Ala Gly		
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Met	Asn	Ile	Ser	Gln	Met	Ile	Thr	Tyr	Trp	Gly	Tyr	Pro	Asn	Glu	Glu	
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Tyr	Glu	Val	Val	Thr	Glu	Asp	Gly	Tyr	Ile	Leu	Glu	Val	Asn	Arg	Ile	
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Pro	Tyr	Gly	Lys	Lys	Asn	Ser	Gly	Asn	Thr	Gly	Gln	Arg	Pro	Val	Val	
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Phe	Leu	Gln	His	Gly	Leu	Leu	Ala	Ser	Ala	Thr	Asn	Trp	Ile	Ser	Asn	
			85				90				95					
Leu	Pro	Asn	Asn	Ser	Leu	Ala	Phe	Ile	Leu	Ala	Asp	Ala	Gly	Tyr	Asp	
			100				105				110					
Val	Trp	Leu	Gly	Asn	Ser	Arg	Gly	Asn	Thr	Trp	Ala	Arg	Arg	Asn	Leu	
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Tyr	Tyr	Ser	Pro	Asp	Ser	Val	Glu	Phe	Trp	Ala	Phe	Ser	Phe	Asp	Glu	
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		145			150				155				160			
Thr	Gly	Gln	Lys	Gln	Leu	His	Tyr	Val	Gly	His	Ser	Gln	Gly	Thr	Thr	
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Ile	Gly	Phe	Ile	Ala	Phe	Ser	Thr	Asn	Pro	Ser	Leu	Ala	Lys	Arg	Ile	
			180			185					190					

Lys Thr Phe Tyr Ala Leu Ala Pro Val Ala Thr Val Lys Tyr Thr Lys
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Ser Leu Ile Asn Lys Leu Arg Phe Val Pro Gln Ser Leu Phe Lys Phe
210 215 220

Ile Phe Gly Asp Lys Ile Phe Tyr Pro His Asn Phe Phe Asp Gln Phe
225 230 235 240

Leu Ala Thr Glu Val Cys Ser Arg Glu Met Leu Asn Leu Leu Cys Ser
245 250 255

Asn Ala Leu Phe Ile Ile Cys Gly Phe Asp Ser Lys Asn Phe Asn Thr
260 265 270

Ser Arg Leu Asp Val Tyr Leu Ser His Asn Pro Ala Gly Thr Ser Val
275 280 285

Gln Asn Met Phe His Trp Thr Gln Ala Val Lys Ser Gly Lys Phe Gln
290 295 300

Ala Tyr Asp Trp Gly Ser Pro Val Gln Asn Arg Met His Tyr Asp Gln
305 310 315 320

Ser Gln Pro Pro Tyr Tyr Asn Val Thr Ala Met Asn Val Pro Ile Ala
325 330 335

Val Trp Asn Gly Gly Lys Asp Leu Leu Ala Asp Pro Gln Asp Val Gly
340 345 350

Leu Leu Leu Pro Lys Leu Pro Asn Leu Ile Tyr His Lys Glu Ile Pro
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Phe Tyr Asn His Leu Asp Phe Ile Trp Ala Met Asp Ala Pro Gln Glu
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Thr Gly Gly Gln Gly Pro Met Pro Arg Val Lys Tyr His Ala Gly Asp
 35 40 45

Gly His Arg Ala Leu Ser Phe Phe Gln Gln Lys Gly Leu Arg Asp Phe
 50 55 60

Asp Thr Leu Leu Leu Ser Asp Asp Gly Asn Thr Leu Tyr Val Gly Ala
 65 70 75 80

Arg Glu Thr Val Leu Ala Leu Asn Ile Gln Asn Pro Gly Ile Pro Arg
 85 90 95

Leu Lys Asn Met Ile Pro Trp Pro Ala Ser Glu Arg Lys Lys Thr Glu
 100 105 110

Cys Ala Phe Lys Lys Ser Asn Glu Thr Gln Cys Phe Asn Phe Ile
 115 120 125

Arg Val Leu Val Ser Tyr Asn Ala Thr His Leu Tyr Ala Cys Gly Thr
 130 135 140

Phe Ala Phe Ser Pro Ala Cys Thr Phe Ile Glu Leu Gln Asp Ser Leu
 145 150 155 160

Leu Leu Pro Ile Leu Ile Asp Lys Val Met Asp Gly Lys Gly Gln Ser
 165 170 175

Pro Leu Thr Leu Phe Thr Ser Thr Gln Ala Val Leu Val Asp Gly Met
 180 185 190

Leu Tyr Ser Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile Leu
 195 200 205

Met Arg Thr Leu Gly Ser His Pro Val Leu Lys Thr Asp Ile Phe Leu
 210 215 220

Arg Trp Leu His Ala Asp Ala Ser Phe Val Ala Ala Ile Pro Ser Thr
 225 230 235 240

Gln Val Val Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp Phe
 245 250 255

Phe Glu Glu Leu Tyr Ile Ser Arg Val Ala Gln Val Cys Lys Asn Asp
 260 265 270

FOLATE DEPENDENT

Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu Lys
275 280 285

Ala Gln Leu Leu Cys Ala Gln Pro Gly Gln Leu Pro Phe Asn Ile Ile
290 295 300

Arg His Ala Val Leu Leu Pro Ala Asp Ser Pro Ser Val Ser Arg Ile
305 310 315 320

Tyr Ala Val Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser Ser
325 330 335

Ala Val Cys Ala Phe Ser Leu Thr Asp Ile Glu Arg Val Phe Lys Gly
340 345 350

Lys Tyr Lys Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr Arg
355 360 365

Gly Ser Glu Val Ser Pro Arg Pro Gly Ser Cys Ser Met Gly Pro Ser
370 375 380

Ser Asp Lys Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp Glu
385 390 395 400

His Val Val Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr Thr
405 410 415

Arg Leu Ala Val Glu Ser Ala Arg Gly Leu Asp Gly Ser Ser His Val
420 425 430

Val Met Tyr Leu Gly Thr Ser Thr Gly Pro Leu His Lys Ala Val Val
435 440 445

Pro Gln Asp Ser Ser Ala Tyr Leu Val Glu Glu Ile Gln Leu Ser Pro
450 455 460

Asp Ser Glu Pro Val Arg Asn Leu Gln Leu Ala Pro Ala Gln Gly Ala
465 470 475 480

Val Phe Ala Gly Phe Ser Gly Gly Ile Trp Arg Val Pro Arg Ala Asn
485 490 495

Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp Pro
500 505 510

His Cys Ala Trp Asp Pro Glu Ser Arg Leu Cys Ser Leu Leu Ser Gly
515 520 525

FOLKERS * 02/16/2000

Ser Thr Lys Pro Trp Lys Gln Asp Met Glu Arg Gly Asn Pro Glu Trp
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Val Cys Thr Arg Gly Pro Met Ala Arg Ser Pro Arg Arg Gln Ser Pro
545 550 555 560

Pro Gln Leu Ile Lys Glu Val Leu Thr Val Pro Asn Ser Ile Leu Glu
565 570 575

Leu Arg Cys Pro His Leu Ser Ala Leu Ala Ser Tyr His Trp Ser His
580 585 590

Gly Arg Ala Lys Ile Ser Glu Ala Ser Ala Thr Val Tyr Asn Gly Ser
595 600 605

Leu Leu Leu Pro Gln Asp Gly Val Gly Gly Leu Tyr Gln Cys Val
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Ala Thr Glu Asn Gly Tyr Ser Tyr Pro Val Val Ser Tyr Trp Val Asp
625 630 635 640

Ser Gln Asp Gln Pro Leu Ala Leu Asp Pro Glu Leu Ala Gly Val Pro
645 650 655

Arg Glu Arg Val Gln Val Pro Leu Thr Arg Val Gly Gly Ala Ser
660 665 670

Met Ala Ala Gln Arg Ser Tyr Trp Pro His Phe Leu Ile Val Thr Val
675 680 685

Leu Leu Ala Ile Val Leu Leu Gly Val Leu Thr Leu Leu Leu Ala Ser
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Pro Leu Gly Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Gly Met
705 710 715 720

Leu Pro Pro Arg Glu Lys Ala Pro Leu Ser Arg Asp Gln His Leu Gln
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35 40 45
Trp Gly Thr Val Asp Gly Tyr Arg Trp Thr Leu Lys Asp Ala Ser Val
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Val Cys Arg Gln Leu Gly Cys Gly Ala Ala Ile Gly Phe Pro Gly Gly
65 70 75 80
Ala Tyr Phe Gly Pro Gly Leu Gly Pro Ile Trp Leu Leu Tyr Thr Ser
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Cys Glu Gly Thr Glu Ser Thr Val Ser Asp Cys Glu His Ser Asn Ile
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Lys Asp Tyr Arg Asn Asp Gly Tyr Asn His Gly Arg Asp Ala Gly Val
115 120 125
Val Cys Ser Gly Phe Val Arg Leu Ala Gly Gly Asp Gly Pro Cys Ser
130 135 140
Gly Arg Val Glu Val His Ser Gly Glu Ala Trp Ile Pro Val Ser Asp
145 150 155 160
Gly Asn Phe Thr Leu Ala Thr Ala Gln Ile Ile Cys Ala Glu Leu Gly
165 170 175

Cys Gly Lys Ala Val Ser Val Leu Gly His Glu Leu Phe Arg Glu Ser
180 185 190

Ser Ala Gln Val Trp Ala Glu Glu Phe Arg Cys Glu Gly Glu Glu Pro
195 200 205

Glu Leu Trp Val Cys Pro Arg Val Pro Cys Pro Gly Gly Thr Cys His
210 215 220

His Ser Gly Ser Ala Gln Val Val Cys Ser Ala Tyr Ser Glu Val Arg
225 230 235 240

Leu Met Thr Asn Gly Ser Ser Gln Cys Glu Gly Gln Val Glu Met Asn
245 250 255

Ile Ser Gly Gln Trp Arg Ala Leu Cys Ala Ser His Trp Ser Leu Ala
260 265 270

Asn Ala Asn Val Ile Cys Arg Gln Leu Gly Cys Gly Val Ala Ile Ser
275 280 285

Thr Pro Gly Gly Pro His Leu Val Glu Glu Gly Asp Gln Ile Leu Thr
290 295 300

Ala Arg Phe His Cys Ser Gly Ala Glu Ser Phe Leu Trp Ser Cys Pro
305 310 315 320

Val Thr Ala Leu Gly Gly Pro Asp Cys Ser His Gly Asn Thr Ala Ser
325 330 335

Val Ile Cys Ser Gly Asn Gln Ile Gln Val Leu Pro Gln Cys Asn Asp
340 345 350

Ser Val Ser Gln Pro Thr Gly Ser Ala Ala Ser Glu Asp Ser Ala Pro
355 360 365

Tyr Cys Ser Asp Ser Arg Gln Leu Arg Leu Val Asp Gly Gly Pro
370 375 380

Cys Ala Gly Arg Val Glu Ile Leu Asp Gln Gly Ser Trp Gly Thr Ile
385 390 395 400

Cys Asp Asp Gly Trp Asp Leu Asp Asp Ala Arg Val Val Cys Arg Gln
405 410 415

Leu Gly Cys Gly Glu Ala Leu Asn Ala Thr Gly Ser Ala His Phe Gly
420 425 430

FOLKERS

Ala Gly Ser Gly Pro Ile Trp Leu Asp Asn Leu Asn Cys Thr Gly Lys
435 440 445

Glu Ser His Val Trp Arg Cys Pro Ser Arg Gly Trp Gly Gln His Asn
450 455 460

Cys Arg His Lys Gln Asp Ala Gly Val Ile Cys Ser Glu Phe Leu Ala
465 470 475 480

Leu Arg Met Val Ser Glu Asp Gln Gln Cys Ala Gly Trp Leu Glu Val
485 490 495

Phe Tyr Asn Gly Thr Trp Gly Ser Val Cys Arg Asn Pro Met Glu Asp
500 505 510

Ile Thr Val Ser Thr Ile Cys Arg Gln Leu Gly Cys Gly Asp Ser Gly
515 520 525

Thr Leu Asn Ser Ser Val Ala Leu Arg Glu Gly Phe Arg Pro Gln Trp
530 535 540

Val Asp Arg Ile Gln Cys Arg Lys Thr Asp Thr Ser Leu Trp Gln Cys
545 550 555 560

Pro Ser Asp Pro Trp Asn Tyr Asn Ser Cys Ser Pro Lys Glu Glu Ala
565 570 575

Tyr Ile Trp Cys Ala Asp Ser Arg Gln Ile Arg Leu Val Asp Gly Gly
580 585 590

Gly Arg Cys Ser Gly Arg Val Glu Ile Leu Asp Gln Gly Ser Trp Gly
595 600 605

Thr Ile Cys Asp Asp Arg Trp Asp Leu Asp Asp Ala Arg Val Val Cys
610 615 620

Lys Gln Leu Gly Cys Gly Glu Ala Leu Asp Ala Thr Val Ser Ser Phe
625 630 635 640

Phe Gly Thr Gly Ser Gly Pro Ile Trp Leu Asp Glu Val Asn Cys Arg
645 650 655

Gly Glu Glu Ser Gln Val Trp Arg Cys Pro Ser Trp Gly Trp Arg Gln
660 665 670

His Asn Cys Asn His Gln Glu Asp Ala Gly Val Ile Cys Ser Gly Phe
675 680 685

Val Arg Leu Ala Gly Gly Asp Gly Pro Cys Ser Gly Arg Val Glu Val
690 695 700

His Ser Gly Glu Ala Trp Thr Pro Val Ser Asp Gly Asn Phe Thr Leu
705 710 715 720

Pro Thr Ala Gln Val Ile Cys Ala Glu Leu Gly Cys Gly Lys Ala Val
725 730 735

Ser Val Leu Gly His Met Pro Phe Arg Glu Ser Asp Gly Gln Val Trp
740 745 750

Ala Glu Glu Phe Arg Cys Asp Gly Gly Glu Pro Glu Leu Trp Ser Cys
755 760 765

Pro Arg Val Pro Cys Pro Gly Gly Thr Cys Leu His Ser Gly Ala Ala
770 775 780

Gln Val Val Cys Ser Val Tyr Thr Glu Val Gln Leu Met Lys Asn Gly
785 790 795 800

Thr Ser Gln Cys Glu Gly Gln Val Glu Met Lys Ile Ser Gly Arg Trp
805 810 815

Arg Ala Leu Cys Ala Ser His Trp Ser Leu Ala Asn Ala Asn Val Val
820 825 830

Cys Arg Gln Leu Gly Cys Gly Val Ala Ile Ser Thr Pro Arg Gly Pro
835 840 845

His Leu Val Glu Gly Asp Gln Ile Ser Thr Ala Gln Phe His Cys
850 855 860

Ser Gly Ala Glu Ser Phe Leu Trp Ser Cys Pro Val Thr Ala Leu Gly
865 870 875 880

Gly Pro Asp Cys Ser His Gly Asn Thr Ala Ser Val Ile Cys Ser Gly
885 890 895

Asn His Thr Gln Val Leu Pro Gln Cys Asn Asp Phe Leu Ser Gln Pro
900 905 910

Ala Gly Ser Ala Ala Ser Glu Glu Ser Ser Pro Tyr Cys Ser Asp Ser
915 920 925

Arg Gln Leu Arg Leu Val Asp Gly Gly Pro Cys Gly Gly Arg Val
930 935 940

Glu Ile Leu Asp Gln Gly Ser Trp Gly Thr Ile Cys Asp Asp Asp Trp
945 950 955 960

Asp Leu Asp Asp Ala Arg Val Val Cys Arg Gln Leu Gly Cys Gly Glu
965 970 975

Ala Leu Asn Ala Thr Gly Ser Ala His Phe Gly Ala Gly Ser Gly Pro
980 985 990

Ile Trp Leu Asp Asp Leu Asn Cys Thr Gly Lys Glu Ser His Val Trp
995 1000 1005

Arg Cys Pro Ser Arg Gly Trp Gly Arg His Asp Cys Arg His Lys Glu
1010 1015 1020

Asp Ala Gly Val Ile Cys Ser Glu Phe Leu Ala Leu Arg Met Val Ser
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Glu Asp Gln Gln Cys Ala Gly Trp Leu Glu Val Phe Tyr Asn Gly Thr
1045 1050 1055

Trp Gly Ser Val Cys Arg Ser Pro Met Glu Asp Ile Thr Val Ser Val
1060 1065 1070

Ile Cys Arg Gln Leu Gly Cys Gly Asp Ser Gly Ser Leu Asn Thr Ser
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Val Gly Leu Arg Glu Gly Ser Arg Pro Arg Trp Val Asp Leu Ile Gln
1090 1095 1100

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Gly Arg Arg Pro Lys Ser Cys Pro Thr Ala Ala Ala Cys Thr Asp Arg
1140 1145 1150

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1155 1160 1165

Glu Val Trp His Asn Gly Ser Trp Gly Thr Val Cys Asp Asp Ser Trp
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Ser Leu Ala Glu Ala Glu Val Val Cys Gln Gln Leu Gly Cys Gly Gln
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Ala Leu Glu Ala Val Arg Ser Ala Ala Phe Gly Pro Gly Asn Gly Ser
1205 1210 1215

Ile Trp Leu Asp Glu Val Gln Cys Gly Gly Arg Glu Ser Ser Leu Trp
1220 1225 1230

Asp Cys Val Ala Glu Pro Trp Gly Gln Ser Asp Cys Lys His Glu Glu
1235 1240 1245

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1250 1255 1260

Thr Ala Gly Thr Arg Thr Thr Ser Asn Ser Leu Pro Gly Ile Phe Ser
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Leu Pro Gly Val Leu Cys Leu Ile Leu Gly Ser Leu Leu Phe Leu Val
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1315 1320 1325

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1330 1335 1340

Met Thr Asp Val Pro Asp Glu Asn Tyr Asp Asp Ala Glu Glu Val Pro
1345 1350 1355 1360

Val Pro Gly Thr Pro Ser Pro Ser Gln Gly Asn Glu Glu Val Pro
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Pro Glu Lys Glu Asp Gly Val Arg Ser Ser Gln Thr Gly Ser Phe Leu
1380 1385 1390

Asn Phe Ser Arg Glu Ala Ala Asn Pro Gly Glu Gly Glu Ser Phe
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<213> Bovine

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gatgcatactg tagtgtgcag acagctgggg tgtggagctg ccattggtt tcctggaggg 240
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<210> 450
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Domain
Consensus Sequence

<220>
<223> Residue 1 is L or I or V

<220>
<223> Residue 2 is any amino acid residue

<220>
<223> Residue 3 is L or I or V

FEDERAL REGISTER

<220>
<223> One or both of residues 4 and 5 can be present;
when present, each of residues 4 and 5 is any
amino acid residue

<220>
<223> Residue 7 is any amino acid residue

<220>
<223> Residue 10 is N or H

<220>
<223> Residue 11 is any amino acid residue

<400> 450
Xaa Xaa Xaa Xaa Xaa Asp Xaa Asn Asp Xaa Xaa Pro
1 5 10

<210> 451
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
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Consensus Sequence

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<223> Residue 1 is L, I, A, or T

<220>
<223> Each of residues is any amino acid residue

<220>
<223> One or both of residues 6 and 7 can be present;
when present, each of residues 6 and 7 is any
amino acid residue

<220>
<223> Residue 8 is P or E

<220>
<223> Each of residues 9 and 10 is any amino acid
residue

<220>

PROTEIN SEQUENCES

<223> Residue 11 is L, I, V, M, F, or Y

<220>
<223> Residue 12 is D, E, N, Q, or S

<220>
<223> Residue 13 is S, T, or A

<220>
<223> Residue 14 is A or V

<220>
<223> Residue 15 is L, I, V, M, F, or Y

<400> 451
Xaa Xaa Xaa Xaa Trp Xaa
1 5 10 15

<210> 452
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Domain
 Consensus Sequence

<220>
<223> Residue 1 is G, S, T, A, L, I, V, or N

<220>
<223> Each of residues 2 and 3 is any amino acid residue

<220>
<223> Residue 6 is L, I, V, M, F, Y, or W

<220>
<223> Residue 7 is D, E, G, H, R, K, or P

<220>
<223> Residue 9 is any amino acid residue

<220>
<223> Residue 10 is L, I, V, M, F, Y, W, G, S, P, or Q

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1

5

10

<210> 453

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Domain
Consensus Sequence

<220>

<223> Residue 4 is G or N

<220>

<223> Residue 5 is any amino acid residue

<220>

<223> Residue 7 is D or R

<220>

<223> Residue 8 is L, I, V, S, A, P, K, or Q

<400> 453

Pro Arg Cys Xaa Xaa Pro Xaa Xaa

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<210> 454

<211> 38

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Domain
Consensus Sequence

<220>

<223> Each of residues 1-12, 14-16, 18, 27, and 29-37 is
any amino acid residue

<220>

<223> Residue 26 is D, E, or N

<220>

<223> Residue 28 is L, I, V, M, F, or Y

<220>

<223> Residue 38 is F, Y, or W

<400> 454

Xaa Glu Xaa Xaa Xaa
1 5 10 15

Glu Xaa Cys Xaa
20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa

35

<210> 455

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Domain
Consensus Sequence

<220>

<223> Residue 1 is F or Y

<220>

<223> Residue 6 is D, N, or R

<400> 455

Xaa Cys Arg Asn Pro Xaa

1

5

<210> 456

<211> 38

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Domain
Consensus Sequence

<220>

<223> Each of residues 2-6, 8, 9, 11-16, 22-24, 26-33,
and 35-37 is any amino acid residue

<220>

<223> Residue 25 is F, Y, or W

<400> 456

Gly Xaa Xaa Xaa Xaa Xaa Gly Xaa Xaa Glu Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Trp Gly Xaa Xaa Cys Xaa
20 25 30

Xaa Cys Xaa Xaa Xaa Gly
35

<210> 457

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Domain
Consensus Sequence

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<223> Each of residues 1-3, 5, 8-11, and 15-22 is any
amino acid residue

<220>

<223> Residue 6 can be absent; when present, it is any
amino acid residue

<220>

<223> Residue 13 can be absent; when present, it is any
amino acid residue

<220>

<223> Residue 7 is E or Q

<220>

<223> Residue 12 is L, I, V, or M

<220>

<223> Residue 14 is E, Q, or K

<400> 457

Xaa Xaa Xaa Leu Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro

20

25

<210> 458
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Leucine Zipper
Region of TANGO 366

<400> 458
Leu Asp Leu Ser Gly Thr Asn Leu Val Pro Leu Pro Glu Ala Leu Leu
1 5 10 15

Leu His Leu Pro Ala Leu
20

<210> 459
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Leucine Zipper
Region of INTERCEPT 217

<400> 459
Leu Ser Cys Thr Gly Leu Gly Leu Gln Asp Val Pro Ala Glu Leu Pro
1 5 10 15

Ala Ala Thr Ala Asp Leu
20

<210> 460
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Leucine Zipper
Region of TANGO 331

<400> 460
Leu Glu Ala Gln Glu Glu His Leu Glu Ala Trp Trp Leu Gln Leu Lys

1

5

10

15

Ser Glu Tyr Pro Asp Leu

20

卷之三